

REVISED
Course of Instruction

1872

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G R A D E D

COURSE OF INSTRUCTION

FOR THE

PUBLIC SCHOOLS OF CHICAGO.

FOURTH EDITION—REVISED.

Adopted by the Board of Education, April 16, 1872.

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CHICAGO

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P R E F A C E.

THE Graded Course of Instruction originally prepared by W. H. Wells, Esq., for eight years Superintendent of Schools of this city, has been thrice modified, and yet in substance it is but little changed.

The work of revision has been carefully prosecuted during the past year. The experience of teachers has suggested modifications. The aid of teachers, in all parts of the revision, has been most cheerfully given, and it is most thankfully acknowledged.

To the Principals of all our schools credit is due for some of the most valuable suggestions, and for timely aid in the preparation of the work.

The suggestions in regard to Elements of Geometry are mainly from the pen of Prof. Safford, Director of the Dearborn Observatory, who has kindly copied the same from his manuscript work on Geometry.

The book is presented to the teachers for their guidance, in the belief that it is yet imperfect, but with the hope that in their hands its errors may be so corrected as to make it subserve the good of the schools and the advancement of sound learning.

In the Appendix will be found a list of the Text-Books used, and the portions of each allotted to each grade.

J. L. PICKARD,
SUPERINTENDENT OF SCHOOLS.

CHICAGO, April, 1872.

INTRODUCTION.

WHAT CONSTITUTES AN EDUCATION.

THE opinions that prevail as to the nature of a good education are as various as are the estimates put upon human life and destiny. The extremes are found in the intensely animal man, who makes his study bear upon the sources of animal gratification, and who seeks to obtain skill in securing the means of gratification—and in the intensely spiritual man, who passes the life of a hermit in bewailing the existence of a body, and in attempting to crucify all those desires and affections that connect him with the things of this world. The latter is, without doubt, the nobler of the two, but to one who recognizes man's double nature, neither can be regarded as entirely satisfactory to man or to his Maker.

In general terms, that education is the best which best fits man to make the most of all his life relations. In other words, he is best educated who makes of himself the best son, the best brother, the best husband, the best father—the most successful artisan or tradesman—the most useful member of society—the best citizen—the most enlightened patriot—the most intelligent lover of his race and of God. In pursuit of such an education the studies of our schools serve as efficient means towards an end, but they are not the end sought.

Those who make Arithmetic, Grammar, Geography and History, Natural Science, Classics or Metaphysics, the end of their study, will never attain a good education. All these have some intrinsic value. The necessities of trade and of commerce make Arithmetic and Navigation valuable in themselves. Our social relations make knowledge of the rules of speech

very desirable. Knowledge of Geography and History is essential to one who would become an intelligent citizen, more especially in this land where the citizen is responsible for the conduct of public affairs; added to this, the knowledge of other times and of other lands, much of which is locked up in forms strange to us, may be made available through the study of Ancient Classics. The principles of Chemistry are of value to one whose lungs and whose stomach are vast laboratories, as well as to one who would, from the hard soil, bring forth the materials to be wrought over into bone, and muscle, and strength. So in each department, the study has some value in itself considered, and the more one knows of books the better, if he stops not with the books, and makes not the acquisition of their contents the end of his study. What others have written, and said, and done, may help us towards the end of study—the ability to write, to say, and to do of ourselves. Books are as needful to the mind as is food to the body; useless, unless digested, and made a part of ourselves—nay, sometimes worse than useless, as undigested food is often the source of a positive injury. The proper question for each teacher to ask is, not how much have my pupils swallowed, but how much have they digested—not how full are they, but how much strength have they gained—not how many rules have they committed, but how many principles have they mastered—not how far have they traveled, but how much have they observed by the way—not how much more do they know, but how much better have they become? The higher and better uses of all studies are their indirect uses, the benefits that flow through their proper prosecution, in greater power of attention, enlarged comprehension, quickened curiosity, greater self-control, and wider and more far-reaching influence over others. We are told that knowledge of self is the best knowledge. The best self-knowledge is consciousness of power in all departments of our being. He who is conscious of the most of this power, has the best education, no matter what his merely scholastic attainments may be.

I have thus far spoken of books as means to a good education, but there are other means to this end which no good

teacher will overlook or lightly esteem. The teacher is studied more than all the books used in our schools, and order, neatness, cleanliness, quiet earnestness, punctuality, truthfulness, self-respect, self-control, obedience to rule, kindness, forbearance, courtesy, considerateness, affability, politeness, sympathy and love wrought into the life of the teacher, so as to be recognized at all times as a part of his very being, will do more towards improving the character and developing the power of the student than all other agencies combined. The absence of any of the qualities named above does seriously impair the influence of the teacher, however great it may be in other respects, and the very best instruction in matters treated of in books can not atone for the lack of a good personal influence.

THE GRADED SYSTEM.

That system is essential to success in any course of study, is apparent to all. All attempts at systematizing a course of study must have some attendant evils. But these are rather accompaniments, than necessary results.

A brief notice of such evils may help toward their eradication.

The Graded System cuts up the work of teaching into parts, which may easily become disjointed fragments, even in the hands of teachers who strive to be faithful in the performance of their allotted work. The tendency of the system, fostered somewhat by our imperfect human nature, is to make the teacher feel that his predecessor *has finished* the work assigned him, and that he has a work *to finish* for his successor. Hence each does his work without much regard to the work of others. This view of the system is a false view. The work is one work, and each part has its relations to, and bearings upon, every other part. There must, therefore, be a *review* of the past, that it may be more firmly connected with the present, and the future must be constantly present to the mind of the teacher, that his work may be preparatory to that which is to follow. It is not expected that the teacher will anticipate the

work of the following grade in the requirements made of pupils, but that, understanding thoroughly the whole course, he will do the work of his grade in such a manner as to make it helpful to the pupil after promotion. The difficulties to be mastered, the obstacles to be surmounted, must be present to the mind of the teacher, that the pupils may, while receiving instruction, be gaining strength also for future need.

This is not like that division of manual labor, in which each does his work according to a given pattern, not knowing or thinking how his work is to be fitted to that of his fellow, but like that of the architect, who lays out his plans upon separate sheets, but in preparing each he has remembered the previous one, and has had his mind upon that which is to follow, so that each is fitted to each, and when the work is completed there will be no lack of beauty, or of strength.

Let each teacher bear in mind that his work is twofold: *First*—to impart knowledge; and, *Second*—to develop strength, and this evil will be entirely eradicated.

Familiarity with the subjects of a grade may lead to a little letting down of the teacher's watch, and a lack of study. The topics can never be so thoroughly mastered but that something new may be learned; at least some new illustration, some new method of presentation, some change of order may be gained by fresh and often-renewed study. In each new class will be found some new phase of character, some mental peculiarity never before presented; and the teacher who sits down in the belief that he has long ago learned all that can be learned of the topics assigned, or of the wants and the capabilities of children, will soon have enough of that contempt which is begotten of familiarity, and will find his task growing less and less pleasant, and his success less marked. He who keeps alive his interest in the work of a single grade, for any length of time, must put forth more effort than he who has a greater range or frequent changes. But this greater effort will make him a more valuable teacher. Let each so cultivate his own powers as that his interest may be ever fresh and absorbing, and this second evil may be eradicated.

The iron limits of the Graded Course serve as bars to some

who, from lack of early advantages, desire to go faster than their classmates are able to do, and to others who, from limited opportunities, wish to pursue certain portions of each grade, neglecting others that seem to them least important. The greatest good of the greatest number is the rule; but to meet these exceptional cases, which are really rare, some provision may be made, such as the good sense of the teacher or the knowledge of the Principal of the school would suggest. The rules of the Board seem wisely adapted to such exigencies. During a portion of the year evening schools are maintained that meet the wants of many, so that this evil does not weigh with any great force against the system.

The good of the pupil should never be sacrificed to the maintenance of a system.

Experience has shown that the system herewith presented does subserve the good of a vast majority of pupils. For the rare exceptions provision may be made at the time, and with special reference to the individual cases.

It is often the case that those who have taken the least pains to master the work assigned them, become the most impatient of limits. The desire to rove into others' fields of labor is generally born of unwillingness to cultivate thoroughly one's own field.

The routine of a part of the course is no duller than the round of the whole. It may require more frequent turns and oft repeated cultivation, but it certainly will stimulate an earnest teacher to the discovery of new methods. No live teacher can under any circumstances be made a machine.

SPECIAL NOTE TO TEACHERS.

Every teacher who desires success will read carefully the suggestions which follow, both general and special. Some may find profit from the hints given. Some may find much to criticize, and the very search for such weak points will be found profitable.

In the work laid out for teachers by this little book, it is desired that each give to the schools his best service. Results only are required. Methods are left to the individual tact of the teacher. The suggestions which follow are the result of the experience of many individuals, and they may be safely adopted by many others, and yet, in some particulars, a better way may be found. All are encouraged to find that better way, and to pursue it when found. That way is best for each by which he may soonest attain the end sought—a thorough mastery of the work assigned. It is not supposed that all teachers will pursue, with equal success, any prescribed methods of instruction. Each must work in his own way, while all labor for the accomplishment of the same end—thorough scholarship and complete manhood. It is not necessary to add, that the suggestions herewith given are not positive precepts, but hints as to good methods that may serve a good purpose to such as have not found better methods.

The teacher's work is necessarily determined for him, but the manner of its accomplishment is as necessarily left to his own freedom of choice. All that is asked is a wise choice, made in the light of experience, and sustained by the results of careful observation.

GENERAL SUGGESTIONS SUITABLE FOR ALL GRADES.

§ I. ORDER IN SCHOOL-ROOM.

In all the exercises of the school-room, order is of the first importance. It is *often* the case that that school is best governed in which there is the least apparent show of attempt to govern. It is *certain* that a noisy teacher will have a noisy school. Constant and nervous calls to order only make the repetition of such calls more and more necessary. The voice of the teacher should seldom be heard in securing the attention of pupils, and rarely, if ever, above the natural key. The bell in the hand of the teacher should not be rung as though the necessity for some sudden alarm existed, but a single tap, or a succession of light and constantly lighter taps, will suffice with a teacher who can stand calm and self-possessed in the presence of the school. Quiet and patient demeanor is worth more than bluster. If a scholar needs reproof for idleness or inattention, the fixed gaze of the teacher upon such scholar until his roving eye rests upon him, will, in the majority of cases, serve the purpose better than calling the name of the pupil. Frequent calling of the names of disorderly pupils often creates more disorder than it cures, since it distracts the attention of others, who would not otherwise have been disturbed.

Some general directions may here be given as to signals, by which the movements of pupils may be directed. For recesses, opening and closing school, these may all be given by the large bell in the hall. For exercises in rooms where there is a musical instrument, all the movements may be directed by

signals given from the instrument. In all other cases, when the teacher directs the movements of his room, the use of what may be called initial signals is recommended. If he wishes a class to give attention, "A;" to turn in their seats, "T;" to rise, "R;" to get in proper line for marching, or for any other purpose, "L;" to move or march, "M;" to face about and change direction of movement, "F;" to halt, "H;" to sit, "S." In all cases, the signal is the initial letter of the word of command. Preparatory to marching, some measures may be counted that shall indicate the desired speed, thus: 1, 2; 1, 2; 1, 2; 1, "M."

§ 2. SCHOOL DISCIPLINE.

The school differs not from the State, so far as regards the necessity for the establishment and enforcement of law. In the school the citizen receives his first training, and he must there take lessons in obedience to rightfully constituted authority. The school must be subject to law. Law without penalty is a dead letter. Penalties must be adapted to the nature of the offence, and proportioned to its degree. There is nothing which more surely weakens the power of the teacher than hasty determination of penalties. In all cases of doubt, give the pupil the benefit of the doubt. The teacher, by reason of his position, does not need it, while it may be of great value to the child. The whole study of those who execute laws should be to secure the most healthful obedience by the use of the least penalties both in kind and in degree. As a general rule, no punishment should be inflicted which tends to make the offender less obedient than before—none which will disgrace him in the eyes of those whose respect he has not forfeited by the offence (and hence the punishment should not be more public than the offence)—and none which in its infliction throws the offender into the very associations which have made him an offender (such as turning a child from school into the street), unless the greater good of the greater number absolutely requires it. Infliction of physical pain has been, from time immemorial, an accepted mode of punishment. It is liable to

abuse, and for that reason should be discouraged wherever a substitute free from the same liability and less degrading in its nature can be used. All kinds of punishment must, from the very nature of the case, be more or less degrading, but they are far less so than are the offences which give occasion for their use. If, by proper punishment, therefore, the offender shall be brought into cheerful obedience, his degradation is stayed, and good results.

The necessity for any kind of punishment diminishes just in proportion as the public sentiment of the school sustains the teacher's authority. Give pupils to understand, either directly or by implication, that the teacher has not the right to enforce obedience, and all discipline is at an end.

Let the penalty for violation of law be visited upon the offender at some fixed time, long enough after the offence to allow time for calm and sober reflection on the part of both teacher and pupil. The necessity for it may have passed before the time arrives, in voluntary confession of wrong on the part of the pupil, or it may be of the teacher (for it is possible that the teacher may be wrong), or in the discovery of some substitute that may serve the same purpose with better effect upon both pupil and teacher. Confession of wrong done never should weaken the respect of the teacher for the pupil, and will never weaken the authority of the teacher who may have erred.

§ 3. PHYSICAL CULTURE.

The real wants and necessities of the body should receive the teacher's earnest attention. It will not suffice to give a few minutes each day to exercises designed to relieve weariness, and to start into new activity the sluggish vital fluids. Such exercises are very important, but none the less so is the posture of the pupil while studying. Serious injuries often result from neglect of the pupil's posture at his desk. An easy, graceful posture is always the most healthful. There should be no constrained precision, nor, on the other hand, awkward lounging. The habit, allowed by some teachers in

pupils who sit with curved spine, and with the face resting nearly upon the book, is extremely injurious. The eye falls forward in the socket, and the sight is often seriously impaired by this unnatural position.

Physical exercises should be given with greater or less frequency, according to the age of the pupil and the atmospheric conditions of the day.

Change of posture and activity are essential in these physical exercises. All the pupils, except such as may be excused on account of ill health, should be required to participate, and to enter into them with energy and promptness. No good comes from any other than a lively and spirited exercise. The teacher should lead the pupil, inasmuch as he needs the exercise nearly as much as they, and, still farther, because his own interest will awaken interest on the part of the pupils. As to kinds of exercise, there is variety enough in the schools, and any teacher, who is not acquainted with the best forms, can readily learn them from more experienced teachers. In teaching the different series of movements, the initial letters may be used: as, "U" for Upward, "D" for Downward, "F" for Forward, "B" for Backward, etc., etc. "R U" would indicate Right hand up, "L D" Left hand down, etc., etc., or the full words may be given until the class is familiar with the order. Music or counting should accompany the exercise.

The physical condition and wants of each pupil should be made a study by the teacher, and the knowledge derived from such study should determine to a great extent the requirements made of pupils. The personal habits of pupils demand constant watchfulness. All discipline and all restraint should have some reference to the bodily condition, and any system of training which ignores the existence of a body, is nearly as pernicious as that which prevails in the prize ring. The body is an ever present fact, and its needs are ever pressing realities. It is worthy of culture for its own sake, and more especially so when considered as the home of the soul. Its healthful development is an important part of the teacher's work, and it is specially urged here because it is so often neglected.

§ 4. MORALS AND MANNERS.

No part of the teacher's work requires more watchfulness, and more painstaking, than that of shaping the child's moral character. In this work, self-culture on the part of the teacher will insure success. The live teacher is reproduced in every child brought under his influence. The child's confiding nature makes him specially susceptible to the teacher's example. Unlike other parts of the work, this can have no set time assigned it in the programme of daily exercises. Set lectures upon kindness, gentleness, benevolence, or any other desirable quality, will not counteract the influence of a single harsh word, an angry gesture, or a selfish act. Good qualities gain strength by exercise, and their exercise should be encouraged.

Love to parents and others, friendship, kindness, gentleness, obedience, honesty, truthfulness, generosity, self-denial, neatness, diligence, etc., are cultivated in children, not so much by direct exhortation and formal precept, as by resorting to expedients that will call these affections and qualities into active exercise. Lead a child to do a kind act, and you will increase his kindness of heart; and this is the best of all lessons on kindness. Let teachers ever remember, that the *exercise of virtuous principles confirmed into habit*, is the true means of establishing a virtuous character.

Little anecdotes, and familiar examples, illustrating the love of brothers and sisters, the respect due to the aged, kindness to animals, mutual love of companions and associates, benevolence, etc., are among the best means of cultivating these virtues. Teaching mainly by example will accomplish far more than any formal catechism of moral instruction.

Teachers should frequently read to their divisions short, entertaining narratives, and make them the subject of familiar and instructive conversations with their pupils. So also in lessons on animals, trees, and all the works of nature, opportunities should be constantly improved to show the wisdom, power, and goodness of the Creator, and to inculcate the reverence that is due to Him, and a sense of dependence upon Him.

Every case of quarreling, cruelty, fraud, profanity, and vulgarity should be made to appear in its true light. The selfishness of children is the greatest obstacle to moral training. To moderate this strong instinct, to teach self-denial and self-control, must be the constant care of the teacher.

There is no time when the watchfulness of the teacher is more necessary than during the recesses, and other hours of relaxation at school. This is the time when little differences are most likely to spring up, and bad passions to gain the ascendancy. No parent's eye is upon the children, and yet they should constantly feel that some kind guardian is near—not to check their cheerful sports, but to encourage every kind and noble act, and to rebuke every departure from the path of virtue and honor.

Good manners are intimately connected with *good morals*, and teachers should improve every opportunity to inculcate lessons of civility and courtesy. In the primary divisions, especially, the teacher should give frequent and somewhat minute directions respecting the ordinary rules of politeness. Let the pupils be taught that when a question is asked them, it shows a lack of good breeding to remain silent, or to shake the head, even if they are not able to answer it. They should receive some general directions respecting the manners of younger persons in the presence of those who are older. They should be taught that well-bred persons seldom laugh at mistakes, etc. The manners of the children, in their intercourse with each other before and after school, and at the recesses, and in going to and from school, should receive the constant and watchful care of the teacher.

The position of the pupil in his seat, his movements in passing to and from the class, his position in class, or at his seat when called upon to recite, should receive the teacher's most careful scrutiny. Bad manners open the door for the entrance of bad morals, and all listless and lounging habits in the school-room are but the sure indication of a loaferish spirit, which, unchecked, will lead to vicious associates and practices. The teacher should respect himself too much to receive any answer from a pupil who is not in a manly posture, and who does not

in his tone and manner, express sincere respect, both for his teacher and for the place he holds among his fellows. Nor can the teacher keep too constantly in mind the truth uttered by Marcel—"Nature, reason, and experience proclaim this order, *example before precept.*"

No teacher can expect to make his pupils more civil, more courteous, or more truthful and virtuous, than he shows himself to be. In dress, in movement, in speech, in thought even, he must *be* what he would have his pupils *become*.

§ 5. GOOD LANGUAGE.

The importance of this subject can not be over-estimated. Every exercise of the school-room, in which words are either spoken or written, should be made an exercise in the use of language. It is thus made a matter of habit rather than of technical study.

The most thorough study of the rules of syntax, the most careful analysis in later years, will not correct the bad habits formed in childhood. Many a man skilled in the use of language has never studied for an hour an English Grammar, while many who can parse any sentence given them, affixing the rule for each word, and giving to each rule its proper number, make constant and egregious blunders in their every-day talking or writing. The habits formed in early life are the ground of this difference.

Special attention is invited to the "Language Lessons" incorporated into our graded work, but it will not suffice to limit the attention given to the language of children to the minutes set apart for these exercises.

The following words of HON. J. G. McMYNN are eminently practical and suggestive:

"Great attention should be given to the language used in the school-room, both by teachers and pupils. It should be pure English, free from all provincialisms; and the construction of the sentences should be grammatical. It is of the utmost importance that the teachers of our primary scholars should be accurate in the use of language; quick to notice, and prompt to correct, all 'bad grammar' heard in their school-rooms. No *slang*, no useless expletives, no unnecessary repetition, no obsolete words,

no violations of orthography or syntax, should, at *any time*, or under any circumstances, be allowed to pass without careful correction. The power of expression may be cultivated by 'Object Lessons' and conversation. Pupils should also be advised and required to write much. Recitations may sometimes be conducted by writing, and will be found profitable. Questions should be pointed and precise; answers should be concise and exact. Every answer should embrace a complete proposition. Frequently the pupil gives the answer only in part. Every exercise, and every recitation, should be so conducted as to habituate the scholars to correct, terse, and elegant modes of expression. All indistinctness of utterance, all clipping of words, all hesitancy of speech, should at once be noticed, and the proper remedies faithfully applied."

In this, as in all other parts of the teacher's work, example is better than precept, and yet a good example may be most effectively sustained by wholesome precepts.

§ 6. MENTAL DISCIPLINE.

The highest ultimate object of intellectual education is mental discipline; and this discipline can only be acquired by mental labor. Examples are frequently arising in which teachers give assistance that is not required, and thus rob the pupils of the discipline which they would gain by overcoming the difficulties themselves. Teachers should study carefully the capabilities of their pupils, and never do for them what they are able to do without assistance. But it will not answer to adopt an inflexible rule to be rigidly adhered to in all cases—for individuals differ—and these individual differences must be considered in determining the measure of help. Pupils should also be guarded against the dangerous habit of assisting one another, without the knowledge and approval of the teacher.

It is also true that some pupils suffer from the want of a little assistance given at the proper time and in the proper way. This should never be direct, but, by starting back to some point which the pupil does understand, let him be led up to the difficulty in his path by careful steps, which he shall take for himself. These steps may be simple illustrations of what he does understand, and yet, in principle similar to the difficulties to be encountered. By overcoming these, he may gain strength to

overcome the greater, and a little care and time taken to-day may save time and care for all future days. The principal difficulties in a pupil's path lie in his inability to apply principles to examples that vary in form and phraseology from the illustrations given him when he learned those principles. The similarity of the examples should be shown the pupil, and he will thus be prepared to do what before he thought he could not do.

It is one of the most important duties of the teacher to exercise a watchful care over the pupils' hours and habits of study. Some pupils never learn to study a lesson abstractedly and with the whole mind; and some teachers have heretofore been so unfortunate as not to know that they have any special responsibility in this matter.

The power of attention is essential to the successful prosecution of study at every stage of progress, and the best efforts of teachers should be directed to the cultivation of this great educational power.

The teacher must have an end in view in every recitation, must understand what course to pursue in reaching that end, and the pupil must be held in that course strictly. This necessarily involves a complete understanding of the lesson in itself and in all its bearings.

In these days there is too much *lifting over* hard places, not enough *plodding through* them. Every obstacle removed from the path of a child by an over kind teacher weakens the child's mind.

§ 7. DIVISIONS, CLASSES, AND RECITATIONS.

1. *Number of Classes in a Division.*—As a general rule, the pupils assigned to each teacher in the Grammar Department should be divided into two classes: in the 5th, 6th, 7th and 8th grades, into three classes; and in the 9th and 10th grades into four.

The number of pupils in a division, or other circumstances, may make it desirable, in certain cases, to depart from this arrangement.

2. *Number of Branches to be pursued at the same time.*—Under

the present classification no alternation of studies will be found necessary, with, perhaps, the single exception in the higher grades of Geography and History. It is impossible so to arrange the course as to make the carrying forward of these two studies at the same time absolutely essential or desirable. The one may be completed and its place given to the other somewhere near the middle of the time allotted to the grade without detriment, and such a course is advised. The study of United States History will, of course, involve the review of the Geography of the United States. Further than that, the two studies have no connection until the High School Class is reached, when the outlines of General History will call for a review of Geography as a whole.

In all other respects the studies of the several grades should be kept along as uniformly as possible. The Course of Study is arranged with reference to the mental wants of the child, and variety is essential to progress.

3. *Order of Exercises and Length of Recitations.*—Every teacher should have posted up in the room an established order of exercises for each day in the week, assigning a definite time for the beginning and ending of every exercise, and of every interval between the exercises, and this order should assign also definitely the times for study, and topics of study as well as of recitation.

This is specially enjoined in order that in case of the absence of the regular teacher, the substitute may know at once what course to pursue.

It is impracticable to establish a uniform rule respecting the frequency and length of recitations. The following scale will serve as a general guide to teachers in this matter:

Recitations in the Grammar Department from twenty-five to forty minutes in length, except exercises in spelling, which may usually be completed in from fifteen to twenty-five minutes; in the 5th, 6th and 7th grades, from twenty to twenty-five minutes; in the 8th and 9th grades, from fifteen to twenty minutes; and in the 10th grade, from ten to fifteen minutes.

4. *Division of Time and Labor.*—In deciding what proportion of time shall be given to spelling by letters, what to spelling by

sounds, to reading, to numbers, to geography, etc., the rule should be this—whenever a class is less advanced in one branch assigned to the division than in other branches, let that particular branch receive special attention till it is as familiar as the others. It is very common to find a class more advanced in reading than in numbers, and still devoting less attention to arithmetic than to reading; the observance of this rule will correct all such errors.

The better course is to keep all parts of the work at about an even pace, so that there will be no necessity for special cramming.

§ 8. RECITATIONS AND USE OF TEXT-BOOKS.

In each department of study, the text-book employed furnishes suitable topics, properly arranged, and clothed in appropriate language. It becomes thus a fit study for teacher and pupil. The latter studies that he may learn new facts; the former, that he may find new methods of illustration, and may discover new paths through which the pupil may be led to the clearest comprehension of the facts learned, to the fullest appreciation of their value, and to the best understanding of their relations to other facts previously learned. The knowledge of the teacher should be so full and comprehensive that he may assign recitations of proper length, and then conduct the recitations to the best advantage. This implies such familiarity with the topics studied as to render the text-book useless to the teacher during recitation—even a hindrance rather than a help. The true teacher will not use a text-book in recitations upon such topics as would make the use of the open book improper on the part of the pupil. His knowledge of the lesson assigned should be at least equal to what he requires of his pupils. The teacher who is confined to the text-book during a recitation, puts a damper upon the enthusiasm of his class. How can he awaken interest in any topic upon which, by his own confession, his pupils know more than himself? The proper place for most text-books is in the teacher's study, and upon the pupil's desk during study hours. At recitation, with the exceptions of reading, grammatical analysis, and translation of classics, text-books should be laid aside by teacher and pupil alike.

Before the recitation, the teacher will have arranged the divisions of the subject treated of in the lesson assigned, and he will then hold his pupils to the order he shall have determined to be the best, requiring not always the identical language of the author, but something equally exact and comprehensive. In mathematical studies, the recitation should consist largely of exercises illustrative of the principles of the text-book, involving the same processes, but varied in figures and in verbal statement from the exercises given by the author.

The teacher's aim will be to test the pupil's knowledge of the subject studied, to correct any misapprehensions he may have fallen into while studying, to ascertain what difficulties have been encountered, and to guide the pupil to the means, by use of which he may gain complete mastery over his difficulties. The recitation may be so conducted as to give the teacher information as to the accuracy of the pupil's knowledge, or so as to give the pupil information upon the best method of study. Both are important, and the occasion for either method must be determined as the recitation progresses. These things admitted, it follows, as a matter of course, that the recitation hour is not a lecture hour, during which the pupil is to receive, passively, the instructions of the teacher; nor is it the hour devoted to the solution of all difficult problems deferred till this time by indolent students; nor yet is it the time for a parrot-like repetition of what the author says. In almost every recitation the pupil should be required to trace the relation of some new fact to previously learned principles. The surest course out of any difficulty is to lead the pupil back to ground with which he is familiar, and thus by skillful questioning to let the light in upon his mind.

Recitations should not be continued after the teacher has failed to fix, or to hold, the attention of the majority of his class.

Questions should be so put as to require thought upon the part of all the class, and not alone upon the part of him whose turn has come to answer. As far as possible, all routine questioning should be discarded, and every pupil be made to feel that he may be called upon to answer any and every question asked.

§ 9. READING.

Every good reader aims first to comprehend the thoughts of the author he reads, and then to convey to others an intelligible idea of the author's meaning. The training of the pupil in reading, therefore, involves two distinct and yet inseparable kinds of instruction. Mental discipline and vocal discipline must be carried along together. Thought and its expression must be considered at one and the same time. *Some* thought may be expressed by any sort of utterance, but *the* thought of the author requires vocal organs under complete subjection to the understanding. To read well, one must know what he is reading, and must have such complete mastery of his vocal organs as to make them faithful servants, ready to do his bidding without mistake of any kind. No dull, listless, unthinking scholar can ever become a good reader. The teacher's first work is to awaken thought. Something the child can understand should be selected as a reading lesson. It is not necessary that the lesson selected be one already understood; it should be one in advance of the child's present ability, but within the reach of his comprehension. We oftener under-rate than over-rate the *ability* of pupils, while the reverse is true as regards their actual *growth* or *progress*.

Children who become expert in the utterance of sentences that contain no thought make no mental progress. There must be obstacles thrown in the child's path, or he will gain no strength. If all be leveled and smoothed for him, his monotonous style of reading is but the outgrowth of an inactive, sluggish mind. The teacher should bring the pupil into the face of the difficulties in his lesson and encourage him to battle, rallying him again and again, if need be, to the contest, until victory crowns his efforts.

To test the accuracy of the child's knowledge of what he reads, he should be encouraged to read sentences, substituting for some selected words, words of his own choosing, that shall change the form but not the meaning of the passage. This exercise may embrace at first but a single word in each sentence, and then may be extended as the capacity of the pupil may seem to warrant, until nearly or quite all the words are changed. In the more advanced classes, poetical selections may be changed

into prose. While the definitions given by the author should not be neglected, the child should be encouraged, as far as possible, to give definitions of his own, and should be permitted, as indicated above, to put his definitions into the place of the words defined, and then to read the sentences he has changed. This test may be still further extended by requiring the pupil to embody the selected words in sentences of his own construction.

If the teacher finds difficulty in securing proper expression in any particular case, the remedy may be found in asking a question, the proper answer to which would be the difficult passage, and in requiring the pupil to give the passage as an answer to the question asked.

The voice of the teacher should be frequently heard in every reading exercise, as an example for the scholars to imitate. If any teachers are conscious of imperfect articulation or expression, they should seek every means of correction within their reach.

There are those who have superior ability and success as teachers of reading, whose methods and whose experience may be made available by those of less experience or less success. In this branch, more than in any other, models may be safely followed. Teachers may learn, as their pupils must learn, by imitating good models. Mere repetition of a badly read sentence does no good, unless the fault be distinctly marked out, and the correct reading be given by the teacher, or by some member of the class who has mastered the difficulty. Good readers in a class may be permitted to give the model. This course often secures the desired result sooner than any other.

The advantages of concert reading will not pay for a single bad habit formed by its careless use. The attention of the class may be kept by other methods, one of which is of importance in other recitations as well—that is, calling upon scholars out of their regular order of standing or sitting, and, if need be, calling upon the same person two or three times, until the impression that he will be called on but once is entirely dissipated. Answers to general questions connected with reading lessons may be given in concert. The enunciation of elemental sounds may also be given in concert. Poetical selections which are already measured

may be read in concert with less difficulty and with less danger than prose.

While a class is engaged in reading, the undivided attention of the teacher should be given to it. If the attention of the teacher be called away necessarily, the exercise should be suspended.

Children should be encouraged to criticize each other fairly and justly. Raising the hand during the progress of the reading should not be allowed, but, at its close, those who have noticed errors should have an opportunity of correcting them, provided always that the critic can illustrate his own criticism. This should be occasionally tested.

An excellent teacher gives as the result of her experience this important caution, "Children must be taught to open their mouths before they can become good readers." The importance and value of this suggestion are fully confirmed by the experience of all good teachers, and this introduces also the important topic of distinct articulation.

Frequent exercises, varied according to the advancement of pupils, in the utterance of elementary sounds, single and combined, should be most faithfully attended to before each exercise in reading. This may be more fully treated under the instructions with reference to the several grades. While good articulation is not the *end* of reading, it is an essential *means*, and one without which the true end—expression of thought—can never be attained.

There is no fault more common in reading than that of stumbling, hesitating, catching and repeating. It is but one fault, and teachers should use every effort to break it up. The moment the child shows the first symptoms, his case should be carefully but immediately considered, and strict attention at once given to its cure. It sometimes arises from the child's vocal organs getting the start of his thoughts, and should be cured by a little hard study, until the pupil becomes familiar enough with the thought to have his mind keep ahead of his voice. It sometimes arises from pure carelessness, and its cure needs no mention. It often arises from the use of books in advance of the child's capacity, so that reading becomes mere utterance, without so much as a thought creeping in even behind a word

uttered. The case suggests its own remedy. It sometimes arises from indulgence in a similar habit in all other recitations.

Whatever its cause, its cure must be certain, or no progress is made, but on the other hand constant retrogression.

Improper breathing has much to do with poor reading, and a variety of breathing exercises should be practised in connection with each lesson. Among those most beneficial may be mentioned—slow and silent inhalation and exhalation—quick inhalation and very slow and silent exhalation—quick inhalation and explosive exhalation—slow and silent inhalation and explosive exhalation—quick inhalation and slow exhalation, with the utterance of some simple vowel sound—slow inhalation and explosive exhalation, with the utterance of some simple vowel sound, &c. All these exercises should be practised by the class, standing squarely and firmly upon their feet, with shoulders thrown back and head in its natural position.

§ 10. SPELLING.

As the English language is constructed, the spelling of its words is by no means easy of acquisition. No system of classification of words has yet been invented that will aid the student very materially. He must memorize all the primitive words he would use, and also all the prefixes and suffixes employed in the structure of derivative words. After these are committed to memory he can bring to his aid rules, with many exceptions, for the proper joining of prefix and suffix to the primitive word.

It would be a blessing to the little ones, who are compelled to spend years in learning to spell, if, in a night, the present structure of words could be forgotten, and if, in the work of reconstruction, "the best writers" would present to the eye only such characters as represent the sounds uttered by "the best speakers." The child would be required then to learn but one language, instead of two, as at present.

But teachers must take the language as it has been given them, and, if possible, save their pupils the disgrace attached

to poor spelling. Unless a correct habit of spelling is formed in early life, there is little probability that it will ever be acquired. Hence special pains must be taken with every written exercise, that every word be properly spelled.

Written exercises are of more value than oral exercises in spelling, and yet the former should never supplant the latter. The order of the letters in a word may be memorized as successfully by aid of the ear *alone* as by aid of the eye *alone*, and still more successfully by aid of both combined.

In spelling, teachers should avoid the use of any unnatural tones of voice, and should pronounce the words as they would read them if they were reading aloud. This will secure the attention of the scholars better than it can be done by any other method.

In giving out the words to a class, teachers sometimes commit the error of departing from the ordinary pronunciation, for the sake of indicating the orthography. Thus, in the word *variance*, the vowel in the second syllable is given very distinctly as long *i*, to show that the letter is *i* and not *e*. The words should, in all cases, be pronounced according to the standard Dictionary used in the schools.

In conducting oral exercises in spelling, pupils should pronounce each word distinctly before spelling it, and they should never be allowed to try twice on a word. Whenever a pupil misses a word, let him afterwards be required to spell it correctly. This may be done as soon as the correction is made in the class, or deferred till the close of the recitation.

An excellent plan is for the teacher to pay no apparent attention to the misspelling, but pronounce the next word in order, and so on, until some pupil, who has noticed the error, spells the misspelled word instead of the one pronounced for him by the teacher, and for this correction he should receive some credit, either by going above all whom the word has passed, and the one who first misspelled it, or by changing places with the one who committed the error, or, if no change of place be allowed, by some mark of credit. The teacher should, in all cases, keep track of the misspelled words, and see that they are not entirely passed over. In all cases of a

misspelled word under this practice, each pupil, who has allowed the word to pass him, should be required to spell it correctly before the recitation closes; if there be time, if not, at the next recitation.

Special attention should be given to syllabication, in connection with oral spelling. Pupils should syllabicate in all cases, as in the following example: *a-m, am; p-l-i, pli, ampli; f-y, fy, amplify*. Nor should there be the least deviation from this rule in cases where the syllable contains but a single letter, as in *element—e-l, el; e, e, ele; m-e-n-t, ment, element*. The reason for this will be specially apparent in words in which the sound of the syllable is not the same as the sound of the name of the letter, and it will appear more important still if we consider this syllabication as an efficient help to distinct and correct articulation in reading.

As pupils are constantly liable to misunderstand the pronunciation of words, it is a very useful practice, in all written exercises, to call on some pupil in the back part of the room to re-pronounce each word distinctly, as soon as it is pronounced by the teacher.

Syllabication in written spelling has but one use, that of determining the place of division of words when a word occupies parts of two lines. With present practice this is of such rare occurrence that it does not compensate for the time spent in syllabication, nor does it warrant the unnatural appearance of words so divided. Besides, any person having learned syllabication in connection with oral spelling need never make mistakes in writing, where the necessity of dividing words arises.

However thorough the drill in spelling may be, from the lessons of the Speller and Reader, every teacher should have frequent and copious exercises in spelling words from other sources. These should be words in common use, chosen, as far as possible, from the range of the pupil's observation, including the new words that arise in object lessons, and in geography, arithmetic, grammar, &c. The more difficult of these words should be written in columns on the blackboard, and studied and reviewed with the same care as lessons from

the Speller and Reader. Failures in spelling these words should be marked with errors, the same as failures in any other lessons.

Teachers should put forth their best efforts, especially in primary classes, to secure the attention of the pupils, and render the lessons as interesting as possible. Occasional exercises in "choosing sides," when properly conducted, may be made highly useful. The exercise of "spelling down" a class may be resorted to occasionally with good effect.

If the teacher finds at any time, while conducting an oral exercise in spelling, that individuals of his class are becoming listless, he can easily recall their attention by the following simple measure: The whole class pronounces distinctly the word given by the teacher, as *notation*; then one scholar says *n*; the next, *o*; the next pronounces the syllable *no*; the next says, *t*; the next, *a*; the next, *ta*; the next, *nota*; the next, *t*; the next, *i*; the next, *o*; the next, *n*; the next, *tion*; then the whole class pronounces the word *notation*.

Another useful method is to read a sentence of reasonable length, and require the members of a class to spell the words in order; the first scholar spelling the first word, the next scholar the second, and so on to the end.

Pupils may be allowed to select words for each other's spelling, confining them to the last lesson in geography, arithmetic, history or grammar. The first in the class pronounces a word for the second to spell, and the second for the third, and so on, the last pronouncing a word for the first. The scholar who fails to pronounce his word properly, or to spell correctly the word given him, should take his seat at once, and the one standing longest on the floor be declared the victor.

No exercise can be more frequently varied than this with profit to the pupil.

In all written exercises the spelling should be carefully scrutinized, and the misspelled words given to the pupil or the class at the next exercise, and it is better that the misspelled word be re-written correctly, and in such a position that the false and true spelling may be seen at a glance.

§ 11. COMPOSITION WRITING.

There is no school exercise so generally disliked as that of composition writing, and yet none may be made more attractive, and certainly none is more valuable. These are some of the first steps to be taken :

1. There should be no set time for the exercise, recurring, as is usually the case, once in two or three weeks: but, instead, brief and frequent exercises should be required at less intervals.

2. The subjects should always be those about which the pupil has been studying, or upon which oral instruction has been given. If, for any reason, the teacher desires compositions upon some particular topic, that topic should be made the subject of a lesson or many lessons, as its importance may demand. Leading questions may then be addressed to the child, and his answers will be his composition for the time. Special commendation should be given for any additional facts or arguments not called for by the teacher.

3. All errors that occur in the use of words in spelling, use of capitals, punctuation, or division into paragraphs, should be carefully marked in the margin by the teacher by the use of "W" for an error in the use of a word—"S" for errors in spelling—"C" in use of capitals, or in the improper use of small letters—"P" for punctuation—"¶" for improper divisions into paragraphs—"O" for any omission of word, or pause, or letter. The proper abbreviation should be placed upon the line in which the error occurs, and the particular spot may be indicated by a dash or not as the age and advancement of the pupil may seem to demand.

4. The pupils should be called upon to read these exercises, and then written criticisms may or may not be called for, according to the advancement of the writer. In all cases, however, the second exercise should be a re-writing of the first, with corrections, enlargement, or, what I think still better, *condensation*. Let special praise be awarded the child who has properly expressed the most thoughts in the fewest words.

The second writing should be presented to the teacher with the original, that he may determine more readily whether or not the needed corrections have been made.

5. Time will be required for the successful carrying out of this work, but it need not be *extra* time, for it may, in most cases, take the place of written abstracts and reviews, at least in the Grammar Department.

§ 12. DECLAMATIONS AND RECITATIONS.

These may be encouraged in all the grades, but they are required only in the Grammar Grades. The following suggestions may be of service in the latter grades:—Let the exercise be commenced as a reading exercise, the pupil standing upon the rostrum; by degrees familiarizing himself with his selection, he may have but little occasion to look at his book, and finally may discard it altogether. One or more pupils previously designated may be called on each day, either at a time set apart for such an exercise, or, as seems to me better, during the reading exercise. Exercises of special merit may be repeated upon public occasions. The expectation of such a call may serve as a spur to careful preparation.

§ 13. MENTAL ARITHMETIC.

Accuracy in analysis, and facility in computation, are the things to be aimed at in this study. The mind of the pupil must be trained to act without the aid of paper, slate, or pencil. No book should be allowed in the hands of the pupil during recitation. In all grades, where a text-book on this subject is used, teachers should make up many exercises similar in principle to those of the book, so that principles may be thoroughly understood. The use of prescribed formulas at all times is not desirable. It cripples independent action and thought. After an example is wrought according to formula, pupils should be encouraged to present other methods of solution, and should be commended for any correct solution, especially if it be brief and intelligible.

The answer should, in all mental exercises, be given first, and then should follow a general statement of the principle involved in the example, and then the solution may, or may not, be given, as the teacher may prefer—*provided*, the teacher is sure that the pupil understands the correct method of solution. A solution may with profit be given by several members of a class, each person called upon taking the solution exactly where it was left by his predecessor, without omission or repetition of a word. This practice secures facility, attention, and accuracy. For the purpose of securing solutions according to a prescribed formula, concert exercises may be made very profitable. Great pains should be taken to secure brevity and accuracy in language, in methods, and in results.

Classes in arithmetic should have frequent extemporaneous exercises in combining series of numbers, involving the principles which they have gone over. These numbers should be given by the teacher, slowly at first, and afterward with more and more rapidity, as the pupils are able to carry forward the computation. The following is an example: Take 5, add 3, add 10, subtract 9, multiply by 8, add 20, add 8, subtract 40, divide by 10—result? Those who are prepared to answer raise the hand, and the teacher calls on one or more of them individually for the answer, or on all together. Exercises of this kind should be commenced as soon as pupils are able to add simple numbers together, and continued through the entire course. Similar examples may occasionally be carried rapidly around the class, each pupil giving in turn the result for one step of the process, with as little delay as possible.

In all exercises of this kind there is danger that but few will derive benefit from them, unless the teacher is specially watchful, and calls out often those who do not give evidence in their countenances of mental activity. In all cases it is well to get answers from a large number of the class, before telling which are right. This course may be pursued—An exercise is given; hands are raised; some one called on gives the result, and all who agree with the result given drop their hands. One of the disagreeing ones gives a result, and those who agree drop their hands; and so on, till all hands are down. The

teacher then announces the correct answer, or if it be not a lengthy exercise, calls upon some one to repeat it, giving results at each step, that those who failed may see the cause of their failure.

In all these exercises it is well to adopt some device by which the numbers given shall at times be addressed to the eye rather than to the ear. For this purpose, four columns may be used, over one of which is placed the sign of addition, another that of subtraction, and so on of multiplication and of division. The numbers to be given may then be written in one or the other of these columns, as the teacher may desire, being careful to avoid uniformity in work. Successive and rapid additions of the same number should be frequently practised, to be followed by successive additions of any two numbers taken alternately. A similar course should be pursued in subtraction.

Multiplication and division are generally better understood, and need not so much special drill as addition and subtraction.

§ 14. WRITTEN ARITHMETIC.

The principles involved in this study are of necessity the same as those acquired in Mental Arithmetic. The two studies should be combined in all the higher grades. It is well to require of pupils an analysis of every question presented for solution before the work is placed upon slate or black-board. Many examples given in Written Arithmetic can be readily solved without the aid of slate and pencil, and it is a waste of time to make of them any other than mental exercises, except so far as the writing out in full what is clearly comprehended, may serve as a model for the solution of more difficult problems involving the same principles. In such cases one model will generally suffice.

The minds of pupils are often confused as they pass from simple to compound numbers—from integral to fractional numbers, under the supposition that they are entering entirely new fields of study. The principles underlying them are the same, and if principles, rather than rules, be taught, difficulties

vanish. More specific directions will be given under the several grades.

As in Mental Arithmetic, more attention than is usual should be given to the statement of the general principle involved in the example.

§ 15. WRITING.

Writing should be taught as a simultaneous class exercise, all the members of the class attending to the same thing at the same time.

In conducting exercises in writing, teachers should make constant use of the black-board. Important letters and principles of the copy should be written on the board, both correctly and incorrectly, illustrating the excellencies to be attained and the errors to be avoided. Teachers who are not accustomed to this mode of illustrating will find that they can easily qualify themselves to introduce it.

Many teachers who excel in imparting a knowledge of other branches, teach penmanship only indifferently well. Teachers who have little taste for this exercise should discipline themselves to increased effort. Even a poor writer may make a good teacher of penmanship; and no one who attempts to teach writing is excusable for not teaching it successfully.

Exercises of special excellence should receive marks of special credit; and deficiencies resulting from carelessness or indifference, should in all cases receive marks of error and affect the scholarship averages as much as failures in any other lessons.

Occasionally, in the higher grades, it may be well to place a copy on the black-board, and require each pupil of the division to hand to the teacher, after so many minutes practice, what he considers the best imitation of the copy. For this purpose the pupil should write on slips of paper, the copy being written but once upon each slip, and then the slips being carefully compared, the one with which the pupil is best satisfied should be handed to the teacher for marking.

The practice of directing the movements of the class by

counting is recommended. By this is meant the counting, not of special principles, but of words. The pupils will thus write with greater care and precision while learning. Rapid writing must succeed slower movements if at all successful.

The writing of all exercises should be noticed, for careless habits will creep in unless it be done.

§ 16. DRAWING.

The same general directions, so far as they are applicable, may be given to this subject as to writing. The exercise is valuable only so far as it receives the patient attention it demands. If it receives its deserved attention, no exercise can be made more profitable. It must be considered as one of the useful branches, especially to pupils who are to rely so largely upon the mechanic arts for their livelihood. The habits of precision and of neatness fostered by its practice are essential to success in any calling, but they are especially valuable to the mechanic. Technical education with us is in its infancy. Drawing lies at its foundation, and should be considered as essential to its proper development.

§ 17. SINGING.

Little need be said upon this subject, since all the exercises outside of the book used are under the direction of the teachers of vocal music. There is, however, one important caution to be observed. Children should not be left to sing while the teacher is engaged in other work. During the exercise the undivided attention of the teacher should be given to it. Besides the regular times for singing, a single verse sung with life, when a spirit of listlessness or of weariness seems to creep over the school, will do much to awaken and refresh the pupils.

All the pupils should give strict attention to the exercise, because nearly or quite all may learn to sing, and because the very few who may not learn to sing may be very much profited by the accompanying exercises—beating time and reading the music. Little profit will come from a singing exercise unless

spirited attention be given to it. Let all dragging be avoided, and let pupils understand that they must individually attend to pitch, time, expression, position and enunciation of words. There should be frequent exercises upon the scales with due attention to registers and quality of tones.

§ 18. ORAL INSTRUCTION.

To each grade some topics are assigned for which no textbooks are provided. These topics constitute what we have been pleased to call "The Oral Course." This course is not designed to be exhaustive, but rather to furnish a little recreation from the ordinary routine of book study, at the same time that it gives a simple outline of matters important to be known by all pupils, especially by such as will be unable to go further than the outline. Properly understood and pursued, it will prove of great value, both by reason of the actual knowledge gained, and more especially of the desire awakened for farther and more exhaustive study. The habits of observation it demands, and the interest it engenders, are of incalculable value to the student. The incidental advantage of leaving the pupil to the expression of his own thoughts and ideas is by no means to be despised. These benefits are proportioned to the general intelligence and tact of the teacher, and the reflex influence of "The Oral Course" upon the faithful teacher will appear in increased teaching power. New sources of illustration are opened, and the ability to employ them is largely augmented.

Nearly every recitation furnishes occasion for more or less incidental instruction, but the teacher who embraces every opportunity to switch off upon side issues may be sure that his time will be largely wasted. The thoughtful instructor will find some occasions that he will not dare neglect. These generally occur in the line of a well-arranged oral course prepared primarily to suit the natural order of development of the child's mind, and secondarily to fit the text-book studies. In both these particulars the course herewith presented will be found better than the one it displaces, and yet it is, doubtless, susceptible of improvement.

Very many of the topics in the Oral Course can be treated

most successfully as Object lessons. The presence of the object gives life to the study. But mere gossip about the object is of no avail. There must be *systematic* study. *First:* What do our senses tell us of the object presented as to color, form, taste, smell, etc.? *Second:* What can we recall of the object when no longer seen, heard, tasted, smelled or felt? *Third:* What are its points of resemblance or of contrast when compared with other objects with which we are familiar? *Fourth:* To which of the three kingdoms of nature does it belong, and what shall be its general classification? *Fifth:* What shall we infer as to its uses and its practical value? The present knowledge of the child will determine how much time shall be spent upon each of the above divisions, but their order may not safely be changed, nor should the attention of the child be diverted from any one until some definite knowledge is gained.

Teachers should make thorough preparation for these exercises, and be sure that their instructions are simple, concise, and accurate. "They should never tell a child what he may be made to tell them, and should never give any information without calling for it again."

While a definite time should be assigned to this exercise, and, as a general rule, no deviation be allowed from the programme, still occasionally opportunities will arise when the object lesson may be made more impressive than at any other time, and advantage should be taken of such favorable opportunities, though it may call up objects out of their regular order.

Some of the facts of meteorology may be most vividly impressed upon the mind during the passage of a severe storm. The parade of a menagerie may furnish excellent opportunities for lessons upon the camel or elephant; the tact of the successful teacher will turn many such occasions to good account.

That instruction of the character sketched above may not be entirely neglected, the topics assigned to each grade should be made a part of the examination for promotion from grade to grade, and at least of equal value with any other portion of the work of the grade. In estimating results of this examination, the expression of the pupil's own observations and thoughts upon the several topics should be counted as of more worth than any

repeated words of others which he may have been required to commit to memory. In other words, the examiner should seek to learn how much the pupil has thought, rather than how much he has absorbed.

Nor is it desirable for the teacher to undertake too many subjects. One thoroughly understood, as far as the capacity of the pupil will permit, is better than many superficially treated. If all the subjects given as examples can be thus thoroughly understood it is well, but if time will not permit the mastery of all, it is better that selections be made, and that the topics selected be carefully studied.

§ 19. ABSTRACTS AND REVIEWS.

Each lesson should be made, to some extent, a review of the previous lesson, without, however, consuming very much time, except in cases in which the previous recitation has been unsatisfactory. Pupils should understand that they are liable to be called on to recite any portion of the previous lesson, and questions enough should be asked in review to make it necessary for them to read over the last lesson before coming to the recitation, unless their previous preparation has been sufficient to fasten it on the memory.

The oral lessons should, in most cases, be reviewed more than once, and in all cases till they are thoroughly learned and remembered.

In most of the studies, one lesson each week should be a review of the four preceding lessons.

In the primary divisions, the reviews will necessarily be oral; but in the grammar divisions they should be both oral and written. In the 1st, 2nd, and 3rd grades, most of the classes should have at least one written review in a month, beside the oral reviews.

It may be well, occasionally, to devote an hour to a written review of all the different branches, in one exercise, selecting ten or more questions promiscuously from all the studies of the class.

In the six upper grades, all the classes should have occasional exercises in writing a few lines of prose or verse, dictated orally

by the teacher, as a test of their proficiency in spelling, punctuation, use of capitals, penmanship, etc. In the 5th and 6th grades, the pupils may use either pen or pencil, at the discretion of the teacher; but in the 1st, 2nd, 3rd and 4th grades they should be required in all cases to use a pen. These exercises should be strictly extemporaneous, and every paper should be passed to the desk at the close of a specified time.

One of the best methods of conducting written reviews is to write several topics distinctly on the black-board, and require the pupils to expand them as fully and accurately as possible. Each pupil should be seated by himself, if practicable, and furnished with pen and paper; but he should receive no assistance, direct or indirect, from either teacher or text-book. Great care should be taken to remove from the pupils, as far as possible, all temptation to seek assistance from books, or papers, or class-mates. When two pupils of a class are seated at the same desk, it is often desirable to have two sets of questions of about equal difficulty—one set for all the pupils sitting at one end of the desks, and one for those sitting at the other end.

Written reviews are among the most successful means that can be employed for securing thoroughness and accuracy of scholarship. They afford a reliable test of the pupil's knowledge of the subject, cultivate habits of freedom and accuracy in the use of language, and afford a valuable discipline to the mind, by throwing the pupil entirely upon his own resources.

In addition to the written reviews, teachers of the higher divisions should require frequent written exercises in connection with the daily recitations in history, grammar, arithmetic, etc.

All written reviews and abstracts should pass under the critical examination of the teacher; the important errors should be corrected; and pupils presenting papers carelessly written, should be required to re-write them.

§ 20. PROMOTIONS FROM GRADE TO GRADE.

The subjects of study embraced in the Course are fixed by the Board of Education, and promotions from grade to grade must depend upon the mastery of these subjects. None should be

omitted, and the test examination should be equally thorough upon all.

As a general rule, the capacity of the several pupils of a class will be found of the same grade, so that they will be best advanced by being kept together, and yet individual instances will present themselves upon which the Principal of the school must exercise his discretion, and the best interests of the pupil will control his action. No pupil should be kept back simply because the teacher desires to retain him in his class, and none pushed forward simply because the teacher desires to get rid of him.

In all cases, the good of the pupil or of the class will control the Principal in determining the time of examination for promotion.

An average attainment of from 90 to 70 per cent. of correct answers (graded from 90 for the lowest grade to 70 for the highest) upon all the studies of the grade, may serve as good ground for promotion. An entire failure in Reading, Writing or Arithmetic should be a bar to a pupil's progress from grade to grade, unless something beyond the pupil's control occasion the failure.

The ambition of very worthy teachers sometimes leads to crowding classes through a particular grade. Such a course, if carried beyond the natural development and growth of the child's mind, works injury in the end, and his course in other grades must suffer a check.

No classes should be hurried through a grade, nor should any be delayed beyond a reasonable time in a grade, because a general examination is either feared or desired.

In the Grammar Department, the time of a school year is not too long for completion of the work of a grade, and as a general rule it is long enough.

In the Primary Department, from six months to a school year will serve as about the proper time for completion of the work of each of the several grades.

Questions for examination should not be confined to the text of the book studied. Part of the questions may be taken from the text-book, and part should be put in such a manner as to test

the pupil's general knowledge of the subject upon which he is examined.

In each list of questions, one or two may with propriety be presented upon such parts of previous grade work as are closely connected with the grade work of the class.

TO TEACHERS.

In order that the Specific Directions which follow may be thoroughly understood, frequent reference must be made to the General Suggestions preceding.

SPECIFIC DIRECTIONS ACCOMPANYING THE SEVERAL GRADES.

T E N T H G R A D E.

OUTLINE.

LANGUAGE AND VOCAL CULTURE.—*Reading* from cards, from black-board, and from First Reader during the last two months in the grade. One hundred and fifty words, both printed and script. Construction of short sentences containing one or more words of the grade. Special attention to tones in reading, spelling, and conversations.

Music.—See special directions upon pages 47 and 48.

Spelling.—Words learned both by sound and by letter.

NUMBERS.—Addition and subtraction by 1's, counting as far as 100. Reading and writing numbers to 100.

WRITING.—Each child to write his own name and the words learned, the capitals in his own names and the capital I.

MISCELLANEOUS.—Conversations about common objects and their more observable properties. The names of the visible parts of the human body. The Five Senses, their organs and use. The use of the Period in written sentences.

Personal Habits.—Cleanliness of person and dress.

Conduct.—Politeness, Truthfulness, Chaste Language.

Breathing Exercises, with use of diaphragm.

Physical Exercises.—Free Gymnastics for upper parts of the body.

PROGRAMME.

Four Classes.—*Sixteen Class Exercises*.—*Eight General Exercises*.

§ 21. LANGUAGE AND VOCAL CULTURE.

Reading.—Whatever method is adopted for teaching words, they should not be considered as learned until the pupil is able to pronounce them correctly at sight, and to give a complete analysis of the words both by sounds and letters. To this end the teacher must give instruction in both the sounds and the

names of the letters, so that the pupil may spell the words first phonically, and then, by naming the letters, distinguishing the silent letters from such as are heard in the pronunciation of the word. This practice will secure distinct articulation.

Were but one method of teaching reading permissible, I should recommend the word-method. The child should learn the names of words as he learns the names of his schoolmates, from their general form, and in case of similarity of form, from their peculiarities.

That he may distinguish John from Harry, he does not necessarily notice each feature of each boy, but the *general* impression made upon his mind enables him to distinguish the one from the other. When close resemblances exist, it is necessary that his attention be called to some one distinguishing feature. Were the pupil called upon only to learn words that are quite or entirely dissimilar to each other, no other than the word-method would be needed, but to every word he learns to-day he will find ere long some other word quite similar in form. He should, therefore, be taught the separate features of each word, that where he finds one generally similar, he may be able to fasten upon some point of difference that may serve as his guide in naming his acquaintances.

Hence, the word-method should be followed or accompanied by the analytic and synthetic, or spelling method. In using the cards, a large number of exercises may be introduced besides those found thereon. The words may be combined into an almost infinite variety of sentences. The teacher may give short and simple sentences, containing words found upon the cards, and require the pupils in turn to find the words upon the cards, or she may require some one pupil to point out the words while the class reads the sentence after his pointing. Sentences may be printed upon the board and the pupils be required to find the words upon the cards. The practice of framing words into sentences is of great importance, so that the child may attach some ideas to words read, and thus avoid tones so common to those who repeat mere words without ideas.

It is well to keep a list of words printed upon the board, to which may be added some new word each day.

The oral exercises may be made subservient to this reading exercise. The child should be taught the names of objects about which he is learning, unless they be too difficult, so that he may recognize the word-picture of the object as he recognizes any other picture. Nearly all names of common objects he may learn in connection with his object lessons, without much extra effort on the part of the teacher. Indeed, each reading lesson should be made, in part at least, an object lesson.

No exercise in reading or in any other branch of this grade should be continued when the class shows signs of weariness, or of uncontrollable inattention. See § 9.

Spelling.—Spelling by letters may properly be extended to all words learned, but spelling by sounds should begin with such words as contain only the simplest elemental sounds, and then be extended to all words learned.

Let the teacher take special pains to secure accurate and distinct articulation of the vowel sounds heard in the syllables attached to the notes of the scale, as *do, re, mi, fa, sol, la, si, do*, long *o*, long *a*, long *e*, and Italian *a*. Connected with these vocal exercises should be associated very short exercises in breathing. See § 9.

Vocal exercises may also be combined with physical exercises, especially in the utterance of the vowel sounds, each being connected with some movement of hands or feet.

The exercises may be varied also as to time, pitch, and volume. Sounds may be prolonged or shortened, may be made high or low, may be given in a whisper or with full tone.

In this grade, pupils are introduced to the use of a book. Much care should be taken to teach the child how to hold his book and to turn the leaves properly. The book should always be held in the left hand, having the thumb and little finger upon the face of the book when opened, and the other fingers upon the back. The index finger of the right hand may then be used to aid the child in keeping his place, or to turn the leaf when needed.

Music.—Each pupil will be expected to sing the scale in the key of C, and to read the syllables back and forth. Classes will sing in chorus all the intervals of the second to five in the key of

C. Theoretical knowledge of *piano*, *mezzo*, staff, bar, double bar, quarter and half notes, quarter rest, and of double measure will be required—also practical knowledge of registers, *piano* and *mezzo*, of beating time, of quarter and half notes, quarter rest, and of accent. Singing by rote and by note of such songs as the Teacher of Music may select will be practised. In theory, one lesson of 20 minutes daily will suffice.

Conversations.—These should be familiar, and with some definite point in view. The pupils should be encouraged in the expression of their own ideas, and great pains taken to secure accuracy of expression by friendly criticism. The topics for conversation may be confined to such as come within the general range of thought and observation of younger children. The design of the exercise is not so much to impart knowledge as to call into activity the child's power of expression, that he may be able to tell properly what he knows, and to present clearly his own opinions and thoughts.

§ 22. NUMBERS.

Develop the idea of *one*. This may be done by placing before the class a group of objects, and having the pupils put them in as many different places as possible, thus leading them to see that the group was a collection of 1's; use a variety of objects; give the term *one*. Exhibit *one* thing and ask how many. Require pupils to point out single things. Write upon black-board the character used to represent *one*, and teach class to form it nicely upon slates.

Placing *one* pencil with *one* pencil, ask how many: give the term *two*; write the character 2 upon board, pupils writing it upon slates. Present and call for 2's of any class of objects. Give concrete questions: "John had one marble and found another, how many had he then?" "John had 2 apples, and ate one of them, how many had he left?"

Proceed in similar manner to develop the idea of 3, of 4, &c., adding and subtracting by 1's. Present objects in groups of 2, 3, or more, and require pupils to tell at sight how many. Teach pupils *how* to form their figures.

Use concert recitation sparingly.

In this exercise at first, pebbles, beans, or better still, blocks an inch square, may be used. Children may also make marks upon their slates, and count them, or they may be required to make a certain number of marks not exceeding one hundred. In counting they should be required to commence at any point and count either forward or backward to some other given number. They should be able to call at sight, and to write the Arabic Numbers as far as one hundred.

This practice may be extended to counting scholars in the room, in the class, or upon the play-ground, to counting the panes of glass in the windows, or any other objects on or about the school premises.

§ 23. WRITING.

The children of this grade may be taught the use of the pencil in making small letters in script form. They should be taught how to hold the pencil in forming such letters. The exercise should be a simultaneous exercise, and should be conducted by the teacher carefully and systematically.

It is well for the teacher to write each child's name upon his slate in permanent form by the use of an iron pencil, or with ink upon the slate frame, that the child may have a permanent copy to imitate in the writing of his name. With the single exception of the initials of the child's name, and the word "I," no capital letters will be written in this grade. See § 15.

§ 24. MISCELLANEOUS.

Common Objects.—Since the tenth grade should be regarded as a bridge from the freedom of home life to the more regular discipline of the school-room, the first lessons should be simple conversational exercises upon home objects, with which the children are already familiar, and in which they feel the greatest interest; their toys, their pets, their plays, their friends, etc., etc. They should be encouraged to give the teacher all the knowledge they possess, and should be stimulated to learn by careful observa-

tion more than they already know. Habits of observation and of accuracy in the use of language are of the first importance. Pupils should be encouraged to bring to the teacher objects for examination, so far as it may be done conveniently and with propriety. There need be no limit as to the character of these familiar objects. All observable properties should be noted without any very rigid attempt at classification. Short and pertinent anecdotes may enforce the lesson which should always cease the moment the interest of the class flags. If the child in this grade can be induced to pass along with all his senses in active exercise, very much good will be accomplished. As to size, color and parts of these common objects, the aim should be to secure the child's own ideas and to correct such as are erroneous, in all cases avoiding the use of difficult words, and making the instruction as simple and as comprehensive as possible.

The Five Senses.—As the child comes in contact with objects in his daily life, he will see, hear, smell, touch or taste them. Upon some objects a single sense may be employed; upon others, several, or even all. It is important at the outset that he learn something about the organs of seeing, hearing, smelling, feeling, and tasting, and their proper uses. Much may be said of the blind, and the acuteness of their other senses, and so of the deaf, and of the reasons why persons born deaf do not learn to speak. The proper care of each of the organs should be enforced. The duty of sympathy for the unfortunate should be impressed upon the minds of all. The methods of instruction of the blind and of the deaf mutes will interest and profit those who have not already some knowledge of them. The comparison of these methods with theirs, and the occasion those in full possession of their senses have for gratitude, will serve as the basis of important lessons.

The Human Body.—This topic should embrace only the more general divisions of the body, as, the head and its parts, skull, face, ears, eyes, nose, mouth, chin, and their relative position and uses; body, chest, neck, throat, limbs, arms, legs, elbows, wrists, hands, fingers, knees, ankles, feet, toes. Something may be said about the bones and the flesh, but only such things as a child may comprehend. See § 18.

MORALS AND MANNERS.

In this grade, and in all succeeding grades, the teacher should neglect no opportunity for encouraging in the child correct personal habits and right conduct. Improper habits and wrong conduct should be kindly corrected, whenever occasion arises, the teacher illustrating in spirit, in voice and in general manner, the lesson to be enforced. In the outline, certain topics are presented that every one may be able to find some work to do in this direction, but he who finds no occasion for counsel or reproof in other matters, may with propriety inquire of himself whether his eye and his ear are sufficiently open.

To the language of the child, special attention must be given, that all profane words, all obscene words may be excluded from their speech.

Right conduct must be commended and its opposite condemned. Illustrative anecdotes are always at hand. See § 4.

PHYSICAL EXERCISES. See § 3.



NINTH GRADE.

OUTLINE.

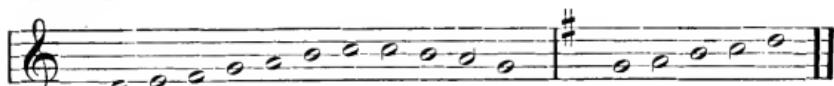
LANGUAGE AND VOCAL CULTURE.—*Reading*: The First Reader. *Spelling*: Oral, written and phonic spelling of all words used in the Reader and in Language Lessons. *Phonics*: To know the names and marking of all long vowels, and of Italian “a”—according to Webster, a, ē, i, ò, u, à.

Capitals in beginning sentences and in proper names; use of Period and of Interrogation Point.

Language: Conversations—Writing all words of the grade—Construction of sentences containing one or more words of the grade—Writing sentences dictated by the teacher.

Music: Individual singing of the scale in key of C, and intervals of second

to five in same key. Chorus singing of all intervals of second in the following example:



Writing scales of C and G with quarter notes.

Practical: Same as previous grade with the addition of P.P.

Theoretical: Scales and names of keys.

Singing songs by rote and by note, as directed by Teacher of Singing.

NUMBERS.—Addition and subtraction tables to 5's, inclusive. Rapid combinations in addition and subtraction, result in no case to exceed 15.

Reading and writing numbers to 1000.

Adding columns of single figures, no figure greater than 5, and sum not to exceed 30, or any two numbers of not more than three figures, such that the sum of no two figures of the same order shall exceed 9.

Roman Numerals to the extent used in the books of the grade.

WRITING AND DRAWING.—*Writing*: One lesson each day in writing words from the reading lesson, with capitals and small letters, as required. Special attention to be given to position and form of the letters.

Drawing upon slates, first six cards of No. 1 Series.

MISCELLANEOUS.—*Domestic Animals* and how to treat them. *Colors of the Spectrum*. *Time by the clock*. *Three kingdoms of nature*.

Personal habits.—As in previous grade.

Conduct.—As in previous grade, adding industry, obedience to parents, care of property, and respect for others.

Breathing Exercises and Physical Exercises as in previous grade.

PROGRAMME.

Four Classes.—*Fourteen Class Exercises*.—*Eight General Exercises*.

§ 25. LANGUAGE AND VOCAL CULTURE.

Reading and Spelling.—The pupils should be able to point out and explain the *title-page*, *table of contents*, *leaves*, *pages*, *margins*, *frontispiece*, and the *headings* or the *titles* of the lessons.

While the pupil reads the first part of the Reader, it is well that a portion of each exercise be devoted to teaching the new words that will be found in the last part of the book and extending the exercise as the pupil advances, even to the new words found in the first part of the Second Reader. In doing this, care should be taken to construct sentences unlike those found in the book. The words and sentences should be

taught from the board, unless the words are found upon the card used.

In preparing an exercise in spelling, it is highly important that young pupils should hear the words pronounced by the teacher. A very useful method is, for the teacher first to pronounce all the words of the lesson distinctly, while the pupils listen attentively and point to the words in the books, as they are pronounced. Next, the teacher pronounces one word, which is repeated by the first scholar in the class; then another word, which is repeated by the second scholar, and so on. After this, if time permits, the teacher and class may pronounce in concert, and then the class pronounce in concert without the teacher. In all concert exercises care should be taken to avoid bad tones.

All the spelling lessons should be neatly written or printed by the pupils on their slates, and the class should be required to read the words from their slates in connection with the spelling exercises. See also §§ 9, 10, 21.

All spelling by sound should be most carefully attended to, and each sound of the word spelled should be given with promptness and precision. Too much stress can not be laid upon the importance of distinct articulation. The lazy and slovenly habit sometimes formed of sliding all the sounds together can not be too strongly condemned. Each sound must be clearly and sharply defined, or the exercise is a positive injury to the pupil. If teachers will observe carefully the position of the organs in the utterance of each sound, the defective utterance of his pupils may be very readily cured.

Music.—The teacher will follow the instruction of the Music Teacher.

§ 26. NUMBERS.

Build carefully upon the work of the previous grades.

Continue the concrete questions in kind, and teach the use of +, —, ×, =, to indicate the operations in the abstract. “Five tops and one top are how many tops?” $5 + 1 = 6$. “Five tops less one top are how many tops?” $5 - 1 = 4$.

Proceed to the addition and subtraction of 2's, requiring pupils to handle the objects and obtain the results. "One top and 2 tops are how many tops?" $1 + 2 = 3$. "Two books and two books are how many books?" $2 + 2 = 4$. "Three hats and 2 hats are how many hats?" $3 + 2 = 5$; $1 + 2 + 2 = 5$; $1 + 1 + 1 + 2 = 5$. "Here are 3 boys; if one is sent away, how many are left?" $3 - 1 = 2$, $1 + 2 - 1 = 2$. The related facts in addition and subtraction should be taught together.

As soon as a new fact is learned, give combinations requiring its use. Review persistently. Talk as little as possible, and thus compel the pupil to use his eyes rather than his ears.

Arabic Notation.—The conversion of words into figures will be found a useful exercise, also requiring the pupil to write and to read as many numbers as he can form from a given number of digits, for example: Give 3, 5, and 1. *Result*, 1, 3, 5, 13, 15, 31, 51, 35, 53, 135, 153, 315, 351, 513, 531. In examples like this no number written should exceed 1000. The exercise may be varied by permitting the pupil to repeat any one of the figures, or all of them, if he prefers, thus, 111, 113, 115, 331, 333, etc., etc.

Addition and Subtraction.—The children should be taught to construct their own addition tables by the use of the slate and pencil, and a great variety of exercises may be introduced that shall give them facility in adding and subtracting as far as the grade extends. As indicating some of the exercises that may be given, the following may serve, it being understood that the blank space is to be filled by the child :

$$\begin{array}{ll}
 1 + 2 = & 5 - 3 = \\
 2 + 3 = & 10 - 2 = \\
 \cdot & \\
 3 + = 7 & 14 - 4 = \\
 + 9 = 12 & - 3 = 8
 \end{array}$$

These exercises may be extended with profit, if the teacher is careful that the sum of the numbers given shall not exceed 5 + 10 or 15.

All counting of fingers should be forbidden, and all other

artificial helps discouraged, as soon as it is possible for the pupil to work mentally.

WRITING. See § 15.

DRAWING. See § 16.

§ 27. MISCELLANEOUS.

Domestic Animals.—The cat, the dog, the horse, the cow, the sheep, the hog, the hen, the duck, the goose, the turkey, etc., may serve as illustrations. Their general structure, their relative size, and their clothing or covering may be considered. The head, eyes, ears, nose and feet of each should be quite fully discussed. Their varied movements in walking, running, flying, etc., their kinds of food, and their teeth (where any are observable), should be made prominent topics of conversation. Anecdotes showing their intelligence, sagacity and cunning, should be drawn from the children, or given them to be called for again. Instances of affection for one another or for man, and of treachery, will be found interesting and profitable. Special pains should be taken to encourage kind treatment of all animals.

Colors.—These are violet, indigo, blue, green, yellow, orange and red. Of these, blue, yellow, and red are usually primary colors, as the others are formed from their mixture. Yellow and red produce orange; yellow and blue produce green; and blue and red produce indigo when the blue predominates, and violet when the red predominates. Pieces of paper or of cloth having any one of these colors may be constantly before the child as book-marks. Flowers may be compared with some one, or all, of these patterns, and their colors approximately determined. Nothing should be said of other colors, until these are made familiar to the child. The following distinctions may be properly observed: Light red, red, and dark red; light blue, blue, and dark blue; light yellow, yellow, and dark yellow, etc. All objects that have any one of these colors may be talked about with reference to their color, and may be com-

pared with other objects similar in color. Colored powders may be obtained from drug stores, which may be mixed by the pupils in a small saucer, by the aid of a small wooden pestle, or by the aid of a case-knife.

The teacher will find great help in fixing the composition of secondary colors in the mind of the child, if she will place upon the board with colored crayons some diagram of colors. I know of no better form than to arrange the colors of the solar spectrum in a circle, placing the secondary colors between the primaries that compose them; *orange* between red and yellow; *green* between blue and yellow; and *violet* and *indigo* between red and blue (the violet being next the red, and indigo next the blue.)

Classification of Natural Productions.—Many objects may have been discussed in the presence of the tenth grade classes that will come properly before them in the remaining grades of the Primary Department, but thus far there has been no attempt at classification. The object has been to awaken curiosity in any direction pleasing to the child. With this grade commences a system to be followed through succeeding grades. The classification of all objects under three general heads—animal, vegetable, and mineral—according to the three great kingdoms of nature. It will be sufficient for the purposes of classification to give the following definitions. Animals are living beings, having the powers of seeing, hearing, smelling, feeling and tasting, and also having the power of voluntary motion. Vegetables are living things, but do not have the powers of sensation or voluntary motion. All other objects are minerals. These distinctions are correct, though the limits between animals and vegetables, and between vegetables and minerals are not easily determined, so that in a very few instances, not often brought to the notice of children, it is difficult to place objects in their proper class. The course to be pursued may be briefly sketched thus. An object is presented. The following series of questions may be asked: Has it life? Can it move of itself? Can it see? Can it hear? Can it smell? Can it feel? Can it taste? If all these questions can be answered in the affirmative, there is no doubt that

it is an animal. If all must be answered in the negative, it must be a mineral. If the first question can be answered by *yes*, and all the others must be answered by *no*, then it is a vegetable. This exhaustive process may be carried out in full or in part, in all cases, until the child classifies readily. Difficulties will arise when dead animals are presented, and especially when ripened and perfected fruits and esculent vegetables are considered, but in such cases the difficulty may be solved, if, instead of asking the questions propounded above, the form be varied so as to read: Has it ever had life? Has it ever seen? etc., etc. Has it ever had the power of voluntary motion? Let the questions be asked either in the one form or the other whenever a new object is presented, and there will be little danger of improper classifications. See § 18.

PHYSICAL EXERCISES. See § 3.

MORALS AND MANNERS.

It is desirable that the child have frequent instruction upon care of his books and clothing, school building and desk, and that the importance of full use of his time be enforced and encouraged by such judicious assignment of lessons as shall give him interesting employment while other classes are reciting. If the teacher can succeed in devising plans by which the child shall be profitably and interestingly employed, little thought need be given to discipline. See § 4.

EIGHTH GRADE.

OUTLINE.

LANGUAGE AND VOCAL CULTURE.—*Reading:* Second Reader.

Punctuation: Comma, Colon and Exclamation Point.

Abbreviations: Months, Days and Titles used in Reader.

Spelling: Oral, Written and Phonic of all words used in the grade.

Phonics: Spelling by sound, names and marking of all short vowels.

Language Lessons: Same as in previous grades, with addition of construction, both oral and written, of sentences expressing facts observed.

Music: Individual singing of all intervals of second in scale, key of C, and all intervals of third to five in the same key. Chorus singing of all intervals of second in the following :



Writing scales of C and G in $\frac{2}{4}$ measure.

Practical Knowledge of Registers—PP, P, M, dotted half note, accent and getting the keys. Theory and Practice of work of 10th and 9th grades, with triple measure and tie.

Singing such songs and exercises by note and by rote as the Teacher of Singing may require.

NUMBERS.—Addition and subtraction tables to 12's. Multiplication and division tables to 5's. Rapid combinations in addition, subtraction, multiplication and division; no result exceeding 60. Reading and writing numbers to 10,000. Adding numbers, sum not to exceed 10,000, and the sum of any one column not to exceed 99. Subtracting numbers of four figures or less. Roman Numerals to the extent used in books of the grade.

WRITING AND DRAWING.—*Writing:* One lesson each day of words from reading lessons, independent of written exercises. Special attention to be given to position and form of letters. *Drawing:* Last six cards of Series No. 1.

MISCELLANEOUS.—*Wild Animals:* Such as are mentioned in the Reader, and such as are seen in the City Parks. *Divisions of Time.* *Plays:* Proper and improper.

Personal Habits.—As in previous grades, adding instruction about bathing.

Conduct.—As in previous grades, adding truthfulness in action as well as in words, and obedience to authority of teachers as well as of parents. Care about all language.

PROGRAMME.

Three or Four Classes—Twelve Class Exercises—Six or Eight General Exercises.

§ 28. LANGUAGE AND VOCAL CULTURE.

Reading and Spelling.—The directions given under the Ninth Grade are so applicable here, that they need not be repeated.
§§ 9, 10, 25.

Punctuation Marks.—The names and uses of the marks given in the outline, are all that is required in this grade. The teacher may dictate sentences that require the use of

pauses learned in this and in the previous grade, and thus give the pupils practice in their use by requiring them to punctuate properly the sentences given. These sentences should contain no words not familiar to the pupil, so that full attention may be given to punctuation.

Let the sentences embodying facts observed, have special relation to the oral work in the Miscellaneous Course, and let both matter and manner be made subjects of friendly criticism.

Music.—As in other grades, under direction of the Music Teacher.

§ 29. NUMBERS.

Arabic and Roman Notation.—As in previous grade, with extension to suit the outline.

Multiplication and Division Tables.—Instruction in all the tables of this grade may proceed simultaneously.

Addition and Subtraction.—See previous grades.

Multiplication and Division.—Use objects. Placing *one* thing before the class, ask what is placed before them, and how many times? “Once one hat is how many hats?” Teach the use of \times , and write $1 \times 1 = 1$. Take two objects of a kind, one in each hand. “How many in each hand?” “How many 1’s in both hands?” “Two 1’s are how many?” $2 \times 1 = 2$. “John, Jane, Mary and Kate have each a ring, how many times 1 ring have all?” “Four 1’s are how many?” $4 \times 1 = 4$. $7 + 3 + 2 - 4 - 5 \times 1 =$. Take four objects of a kind, 2 in each hand, and develope the idea of 2 times two pencils, 2 knives, and write $2 \times 2 = 4$: teach also the related fact in division—two 2’s are 4, 4 are two 2’s, $4 \div 2 = 2$. Division by 2 may be illustrated by placing a number of pencils upon the table, and having pupils take 2 pencils each, until all are taken. “How many 2’s are taken?” Comparing the operations, the relation of addition to multiplication, of subtraction to division, will be readily perceived, and pupils will learn how to construct their own tables. Add and subtract by 2’s, 3’s, etc., to limits of grade. Give simple practical questions requiring results only. As practical exercises in review of these tables,

examples like the following may be given the pupil to work upon while the teacher is employed with other pupils.

$$\begin{array}{rcl} 4 \times 8 = & & 16 \div 4 = \\ 3 \times & = 18 & \div 3 = 5 \\ \times 6 = 12 & & 12 \div = 3 \end{array}$$

The blank space is to be filled by the child. An exercise a little in advance of the above may be given as follows:

What numbers multiplied together will produce 12, 15, 18, 24, 42, or $\times = 16$. $\times = 30$. $\times = 25$.

Care being taken not to go beyond the table of 5's, or not to exceed the product 60.

Addition and Subtraction of Written Numbers.—The examples given children should be exceedingly simple at first, and care should be taken that they do their work properly, and within the limit established by the outline. As the work of written addition commences here really (since in previous grades nothing is allowed that involves what is usually called "carrying for tens," or reducing to higher denominations) pains must be taken to cultivate a right habit of adding. To illustrate. Given a column of figures:

say, 6 *Improper.*—Eight and one are nine, nine and five are fourteen, fourteen and three are seventeen, etc.

5 *Proper.*—Eight, nine, fourteen, seventeen,
1 etc., the pupil giving only results at each
8 step, thus securing attention and facility.

25 *Proper.*—Seven, thirteen, twenty-one,
34 twenty-five, thirty=three tens, and no units.

18 Then three, five, six, seven, ten, twelve=
16 one hundred, and two tens.

120

Combinations.—The teacher must aim to secure attention and ready thought.

WRITING. See § 15.

DRAWING. See § 16.

§ 30. MISCELLANEOUS.

Divisions of Time.—This should include the year; the months and their names; the days, and the names of the days of the week; the seasons, their names, and the names of the months in each season.

Wild Animals.—Treat of them in the following order: Structure, covering, food, teeth, manner of catching prey (if carnivorous); resemblance to domestic animals; their nature and their usefulness. Teach how to treat them. See § 18.

Plays.—There is great need of special instruction as to the character of plays, that they shall not be such as injure or annoy others not engaged in them; and as to the spirit of play, that it shall always be cheerful and unselfish, and that the language used shall always be chaste and temperate. The only restraints needed are such as arise from the proper care of clothing, politeness, respect for others, cleanliness and honesty. Within these limits let youthful spirit be free.

There is perhaps no one thing that will demand attention more frequently than the meddlesome interference of older pupils with the plays of the younger.

The disposition to gain an advantage at the expense of honesty and truthfulness in action as well as in word, early develops itself, and it is very important that it be early checked. See § 4.

PHYSICAL EXERCISES. See § 3.**S E V E N T H G R A D E.****OUTLINE.**

LANGUAGE AND VOCAL CULTURE.—*Reading:* 160 pages of Third Reader.
Punctuation: Names of all marks used, and use of all except the Semi-colon.

Abbreviations of all words in the grade, that are usually abbreviated.

Spelling: Oral, Written and Phonic of all words learned.

Phonics: Spelling of words learned, marking of all vowels,

Language Lessons: Continue previous grades, adding oral and written descriptions of pictures.

Music: Individual singing of all intervals of the second in scales, with keys of C, G and D; also, the following intervals of the third. 1, 3,—2, 4,—3, 5, with inversions. Chorus singing of all intervals of the second and third, in the following:



Writing scales in key of C, G and D, with quarter and half notes. Theory and practice of work in previous grades with addition of knowledge of F. Singing such songs and exercises as the Teacher of Singing may assign.

NUMBERS.—Multiplication and division tables to 12's inclusive completed. Rapid combinations in addition, subtraction, multiplication and division; no result to exceed 144. Analysis of simple problems, involving addition and subtraction and one step in either multiplication or division. Reading and writing numbers to 100,000. Addition and subtraction of numbers, sum or minuend not to exceed five figures, sum of any column not to exceed 99. Multiplication of any number not exceeding four figures by any number less than 13. Division of any number by some number less than 6. Roman Numerals to the extent used in books of the grades.

WRITING AND DRAWING.—*Writing:* One lesson each day, independent of written exercises, of words learned in reading and other lessons. Special attention to position and form. *Drawing:* First six cards of Series No. 2.

MISCELLANEOUS.—*Wild Animals:* Adding to previous grade, beaver, whale, camel, trout and bee. *Trades and Materials.* Clothing and its care when not worn; kind adapted to weather, &c.

Personal Habits: As in previous grades, with more specific instruction as to how to keep clean.

Conduct: As in previous grades, adding special instruction as to polite treatment of others in the street, upon the sidewalk, the rights of people to pass without molestation or insult; also, obedience to civil authority; also, the rights of public and private property.

PROGRAMME.

Three Classes—Twelve Class Exercises—Six General Exercises.

§ 31. LANGUAGE AND VOCAL CULTURE.

READING. See § 9.

Construction of Sentences.—In this exercise the pupil may be required to ask a question bearing upon his lessons and then to

answer it, or he may express in his own language what he has learned about some object embraced within "The Oral Course." At any rate let the exercise have some other end in view than the mere writing of the sentences.

Punctuation Marks.—The teacher may dictate exercises requiring the pupil to punctuate them properly, or the pupil may be required to correct an exercise written upon the board without capitals or punctuation.

Abbreviations.—Whenever a word is spelled that is usually abbreviated, its proper abbreviation shall be taught, or required if already learned at the time of spelling. No extra time need be given to abbreviations.

Music.—Instruction given by Music Teachers.

§ 32. NUMBERS.

Arabic Notation.—See instruction of previous grade, and extend to suit outline.

Multiplication and Division Tables.—Extend instructions of previous grades.

Give persistent drill, both oral and written, in promiscuous tables. Each fact in the addition and subtraction tables should be as thoroughly fixed in the memory as are the facts in the multiplication and division tables, and by the same process—repetition. Passing beyond the range of the tables, pupils should be taught to depend upon association: $5+7=12$, $15+7=22$, $25+7=32$, $43-7=36$, $33-7=26$, etc. Adding and subtracting by 2's, 3's, etc., will develope this idea.

Multiplication and Division.—In multiplication, the principle of reduction is exactly the same as in addition, 1376×4 : 4 times 6 units are 24 units, or 2 tens, 4 units. Write the 4 units, and add 2 tens to 4 times 7 tens, etc. This is simply a short method of adding, and should be illustrated by its corresponding example:

$$\begin{array}{r} 1376 \\ 4 \\ \hline 5504 \end{array} = \left\{ \begin{array}{l} 1376 \\ 1376 \\ 1376 \\ \hline 1376 \end{array} \right.$$

The principle of "carrying" is precisely the same as in addition—and for a time it may be well to require the child to prove his multiplication by addition.

Addition and Subtraction.—The only new feature introduced is that usually called "borrowing" in subtraction. The principle that includes this process can be easily explained to a child in many ways. He has a ten cent piece and five cents in his pocket. He buys a pencil for seven cents. It is evident that he can not pay for it out of his five cents, and he must "break" his ten cent piece—having three cents of that left, which, with his five cents, makes to him a remainder of eight cents. These concrete illustrations may be given, and then the abstract be used. Seven ones can not be subtracted from five ones, but it may be subtracted from one ten or ten ones, leaving three ones, which, with the five ones he had before, makes eight ones as his remainder.

Division.—No explanation of the principle need be undertaken, but very simple examples in short division may be given till the child learns how to perform them.

Analysis.—The recitation should be purely mental. Occasionally it may be well for the teacher to place some pupil before the class who shall read the example to be solved, that her whole attention may be given to the solution. In every case the answer should be given first, and then the solution required, except in cases in which the only method of solution possible is a mere useless repetition of words. Under this exception come such cases as the following: "What is the product of 6 by 5?" To attempt any solution of this question is waste of time. The same may be said of "How many times is 5 contained in 25?" The answer is 5, and that is all that can properly be required. A word as to solution of concrete examples may not be inappropriate. The order should be: *First*, the answer; *second*, the statement of the general principle underlying the solution, and *lastly* the solution. To illustrate: *Problem:* At three dollars a pair what

will five pairs of shoes cost? *Answer:* Fifteen dollars. *General principle:* Five pairs of shoes will cost five times as much as one pair. *Solution:* Since one pair of shoes cost three dollars, five pairs of shoes will cost five times three dollars, or fifteen dollars. Therefore, etc. This whole process need not be repeated in every instance, especially when the pupils have become familiar with it. If the teacher finds a pupil inattentive, the repetition of the question may be required. See § 13.

WRITING. See § 15.

DRAWING. See § 16.

MISCELLANEOUS.—*Wild Animals:* Extending the instruction of the previous grade beyond the more observable properties, their peculiar structure, their resemblances to domestic animals, their habits of living, their weapons of warfare, the modes of capture, and their degrees of intelligence should be learned. Each teacher may extend this list as far as time and the interest of the class will admit. At each lesson some instructive anecdote should be given, and the same should be called for at the next recitation.

Trades and Materials.—In calling out the knowledge of the child upon this topic, such trades as are connected with the absolute necessities of life should be first considered; first, because the most important; and then because these afford the most abundant facilities for observation. Of such are the trades of the carpenter, the mason, the painter; the shoemaker, the tailor, the milliner; the blacksmith, the plumber, the tin-worker; the farmer, the miller, the baker; the house mover, the sewer-builder, the cistern-maker, etc., etc. The materials wrought upon, with the articles manufactured, should be called for. By way of review, take some object, the school-room for example, and inquire how many tradesmen have had something to do in its construction, and what materials they used. See § 18.

Rights of People.—Children sometimes in wanton sport, insult people who are passing in the street, and especially those who are likely to attract attention by reason of some deformity

or unsightly clothing, or it may be of unfortunate intoxication. The meanness of such conduct can not be too strongly urged.

Rights of Private and Public Property.—Occupied dwellings are sometimes made the target for stones by some mischievous boys, and unoccupied buildings, street lamps, etc., are quite too often injured wantonly. No boy of a manly spirit will ever be guilty of such conduct, and he who will do such things should be made to feel the weight of scorn which such conduct merits. Any child who accidentally injures the property of another, if honorable, will seek to make immediate restitution. It is not enough that the child did not intend to do the mischief; he should intend not to do it.

Obedience should always be prompt and cheerful. See § 4.

PHYSICAL EXERCISES. See § 3.

SIXTH GRADE.

OUTLINE.

LANGUAGE AND VOCAL CULTURE.—*Reading*: Third Reader completed.
Spelling.—Oral, written and phonic of all words learned.

Punctuation.—Names and uses of all marks.

Abbreviations.—All words in the grade that are usually abbreviated.

Phonics.—Spelling by sound all words learned. Equivalents of the long vowels and of the Italian *a*.

Language Lessons.—As in previous grades, adding definitions of common words in the reading lessons, and writing sentences expressing the thought of the reading lesson, with change of language.

Grammar.—See special instructions.

Music.—Individual singing of all intervals of the second and the third in the following:



Chorus singing of all intervals of the second and third in the scales—keys of C, G, and D—also, the following intervals of the fourth: 1-4, 2-5, 3-6, 5-8, and their inversions.

Write scales of keys of C, G, D, in $\frac{2}{4}$ measure. Theory and Practice as in preceding grades, adding quadruple measure, dot and pause. Singing such songs and exercises as the Teacher of Singing may direct.

NUMBERS.—Rapid Combinations. Primary Arithmetic. Reading and writing numbers of two periods. Add, subtract, multiply and divide so that the sum, minuend, product or dividend shall not exceed two periods, multiplier two figures, divisor 12 or less.

Analysis of simple problems, requiring addition, subtraction, multiplication and division. Multiplication of any number of a single period by any number of tens, hundreds, or thousands, not exceeding 12. Division of units into equal parts, with names of parts—number of parts not to exceed 10. Tables of U. S. money, avoirdupois weight, of dry, liquid, and long measures, and of time. Roman Numerals to the extent used in books of the grade.

GEOGRAPHY.—See special instructions.

WRITING AND DRAWING.—*Writing:* Use of copy-book, pen and ink. *Drawing:* Last six cards of Series No. 2.

MISCELLANEOUS.—*Articles eaten and worn.* *Hygiene of eating and sleeping.*

Personal Habits.—As in previous grades, adding cleanliness of dwellings.

Conduct.—As in previous grades, adding obedience to law, and purity of thought and action.

PROGRAMME.

Three Classes—Ten or Twelve Class Exercises—Six General Exercises.

§ 34. LANGUAGE AND VOCAL CULTURE.

Reading.—See previous grades and § 9.

Spelling.—See previous grades and § 10.

Abbreviations.—See Seventh Grade..

Construction of Sentences.—See Seventh Grade.

Music.—Instructions given by Music Teacher.

Definitions.—These should be given in language understood by the pupil. Unless the words given in defining be more easily comprehended by the child than is the word defined, the time spent upon this work is worse than wasted. To test the pupil's knowledge of the meaning of words, he may be required to substitute for the words defined others that shall convey essentially the same idea. Occasionally, the exercise of reading some selected passage with as many words substituted as can be done without changing the meaning of the passage, is desirable. The passage selected for such an exercise should in all cases be within the easy comprehension of the pupil.

Grammar.—Pupils in this grade should be taught to distin-

guish name-words from action-words, or nouns from verbs, in their reading and language lessons ; to distinguish and name the subject and predicate of simple sentences in which each consists of but one word ; to distinguish common and proper nouns, the property of number and the time of the action, whether present or past ; also the change of form to denote number. All these should be taught, not technically, but by simple examples. A correct use of the articles *a*, *an* and *the*; also of the words *this*, *that*, *these* and *those* will be required. Correct use of capitals, period, interrogation, quotation marks, and the comma so far as it is used to separate the words of a series, should be learned and the ability to use them properly tested by examples. Correction of errors in speech.

§ 35. NUMBERS.

Combinations, oral and written, introducing division in the fractional form in the oral, and the use of parenthesis in the written. Guard against a *habit* of obtaining multiples by single additions or subtractions. *Fractions*—develope the idea by the actual division of objects into equal parts. Extend the applications to questions in which the whole cost or quantity is given, and one or more of the equal parts required ; or one of the equal parts given and whole cost or quantity required ; include, also, abstract questions : $\frac{1}{2}$ of 10, $\frac{2}{3}$ of 15, 7 is $\frac{1}{6}$ of what? etc. *Denominate Numbers*.

Primary Arithmetic.—See instructions under Seventh Grade and § 13.

A very useful exercise in numbers that will employ pupils while the teacher is busy with other classes, is sketched below :

5	87	5	31,250
9	78	15	6,250
		45	

The process is to be continued, which is indicated in each column, whether it be addition, subtraction, multiplication or division, and may be carried either to the lowest possible figure on the one hand, or to the limit of numbers allowed the grade on the other.

Such exercises employ children whose time cannot be wholly devoted to study of books. The child must not be told by the teacher what to do with the examples, but he must determine for himself.

Analysis.—See previous grades.

Reading and Writing Numbers.—Instruction in previous grades extended to the limits of the outline.

Addition, Subtraction, Multiplication and Division of Written Numbers.—The only new principle introduced here is that involved in dividing numbers, each figure of which is not an exact multiple of the divisor. The principle, applied in part to subtraction, of reducing a unit of a higher order to units of the next lower order, in order to obtain a minuend large enough to answer the demands of the subtrahend is applicable here to its full extent. The remainder at each step of the process in division must be reduced to units of the next lower order that, with the units of that order already given, a new dividend may be formed, and thus no part of the number is really left undivided. The tact of the teacher will devise ready illustrations of the principle.

§ 36. GEOGRAPHY.

The things to be taught are—1. Points of Compass. 2. Locate by points of the compass the different parts of the school-room, also objects in school-room, Lake Michigan, Post Office, High School, Court House, and prominent objects in the neighborhood of the school. 3. Locate a few prominent streets, giving the direction in which they run : also the names of five streets each way from the school-house, in their order. 4. Define River, Lake, Canal—objects readily seen. 5. Draw an outline map of Chicago, giving the river and its branches, the lake and the streets which bound the block upon which the school-house is situated.

§ 37. WRITING AND DRAWING.

Writing: The use of the pen is first required in this grade. The points to be attended to are, the kind of pen used, the

manner of holding the same, the precautions to be taken against soiling the fingers and blotting the paper, and the cleaning of the pen after its use. Each pupil should have a small piece of paper, upon which to try the pen before writing, also a blotter to keep under the hand while writing, so that the paper may not become oily by the frequent passing of the hand over it. To secure neatness and uniformity, the teacher should direct all the movements of the class in writing, requiring all to write the same words at the same time, and allowing no rambling writing. If a pupil is absent upon any day set for writing, his book will show a complete blank for that day. The teacher, may or may not give him permission to make up his loss, as the circumstances attending his absence may warrant. At least two books should be written through in this grade, and the last one should be marked in examination for promotion.

Drawing: See § 16.

§ 38. MISCELLANEOUS.

Articles Eaten and Worn: The more common articles of food and of apparel are to be taken up. Children will need a map before them that they may find the places from which the articles are brought. Special pains should be taken to distinguish *home* from *foreign products*. The methods of growth, and the preparation needed to fit articles of food for the table, and the process of manufacture of articles of wearing apparel : the different kinds of food and of clothing suited to warm and to cold climates ; the kinds of animals best fitted to our wants, both with reference to food and to clothing ; the articles raised and manufactured at home that are sold in exchange for foreign articles. These topics should occupy the attention of the children, until they have some knowledge of articles found upon the table and in the wardrobe.

To make the matter more definite, it will be sufficient to treat of the following articles of food and of apparel :

Of Food.—Different kinds of flour and meal, as wheat, rye, corn and oats, and the modes of preparation of each ; bread of

different kinds, and how made; butter and cheese; meats, as beef, pork, mutton, poultry, fish, how prepared for market and how cooked; salted meats; sugars of different kinds, and how made; tea, coffee, and chocolate.

Of Apparel.—Name five articles each, made of wool, of cotton, and of silk; two articles made of flax; how silk, cotton, wool and flax are obtained; what articles are made from leather, and how leather is manufactured.

Hygiene of Eating.—The child should be taught to avoid gluttony and intemperance; to adapt his food to the condition of the climate and seasons; to eat at regular seasons, and to sleep regularly in well ventilated apartments, as far as possible changing his clothing at night. The effects of intemperate eating and drinking may be presented, with well chosen illustrations.

Personal Habits.—See previous grades.

Conduct.—See previous grades. That the child is amenable to civil law should be impressed upon his mind, and the penalties attached to violation of law may be properly taught, especially such as pertain to infringement of the rights of others, injury to person or property of others, cruelty to dumb animals. See § 4.

PHYSICAL EXERCISES. See § 3.

At this point pupils pass from the Primary to the Grammar Department, but the change is not at all different from that experienced in passing from any other grade to the next above it. The distinction is one of name merely, and in our system has no special significance. Success in the Fifth Grade has the same conditions as elsewhere--thorough and patient study.

FIFTH GRADE

OUTLINE.

LANGUAGE AND VOCAL CULTURE.

*Reading.**Definitions. Abbreviations.**Spelling* from Speller and all other text books.*Phonics*.—Spelling by sound all words learned. Study of equivalents completed.*Language Lessons* as in previous grades, adding reproduction of incidents and stories related by the teacher.*Grammar*.—See special instructions.*Music*.—Individual singing of all intervals of the second, third and fourth in the following:

Chorus singing of all intervals in scale, key of C. Write scales, keys of C, G and D in $\frac{2}{4}$ time. Theory and practice as in previous grades, adding knowledge of absolute pitches of the three scales, keys of C, G and D.

Singing such songs and exercises as the Teacher of Singing may direct.

NUMBERS.—Rapid combinations; Intellectual Arithmetic; analysis of problems involving any three of the fundamental operations; reduction of integers to improper fractions; of improper fractions to whole or mixed numbers, and of fractions to equivalent fractions, each denominator to be a factor or multiple, by 12 or less, of the original denominator; tables of denominate numbers; reading and writing numbers to three periods; addition, subtraction, multiplication and division, multiplier 3 figures, divisor 12 or less, result in no case to exceed three periods.

Simple operations in Federal money, division by any number of tens, hundreds or thousands not exceeding 12, to illustrate contractions so far as dividing by 10, 100 or 1,000.

GEOGRAPHY.—Part of Primary Geography. See special instructions.

WRITING AND DRAWING.—*Writing* two books, last one to be marked for promotion.

Drawing.—First half of Drawing Book No 1 completed.

MISCELLANEOUS.

Classification of Animals.—Vertebrates (mammals, birds, reptiles and fishes). Invertebrates—(articulates, mollusks and radiates).

Botany.—Elementary.

Hygiene of Exercise.

Personal Habits as in previous grades.

Conduct as in previous grades, adding modesty and criminality in intent of action.

Review of all previous grades.

PROGRAMME.

Two or Three Classes—Eight or Ten Class Exercises—Four or Five General Exercises.

§ 39. LANGUAGE AND VOCAL CULTURE.

READING. See § 9.

SPELLING.

Spelling.—In this grade the child is introduced to the use of the spelling book. When the lesson is assigned, the teacher should carefully pronounce each word of the lesson, and require the class to repeat it in concert, having their attention fixed upon the word, so that when the word is studied by the class at their seats, no incorrect or imperfect pronunciation shall make trouble when the recitation comes. See § 10.

DEFINITIONS. See § 31.

Phonic Analysis.—One point should be taken up at a time and mastered, with frequent reviews of what has been previously learned, especially in cases of possible combinations of sounds already learned with the one under study. The attention of the class must be held to the subject of the lesson, and with the understanding that a little well done is better than much superficial work.

Grammar.—The pupils should be taught the nominative and possessive cases of nouns, the property of gender in connection with the personal pronouns, and should be required to use the same correctly in the construction of sentences. They should also be taught to distinguish the present, past and future tenses of the verb, with the method of their formation, also, the use of the verb "To be" as a copula. Word modifiers of subject and predicate may be learned, with the degrees of comparison of

which they are susceptible. The affirmative, negative, and interrogative forms of sentences should be taught, and the distinction of subject and predicate where more than one word is contained in either.

Correction of errors in speech is very desirable. As far as possible, all technical language should be avoided. Simple sentences selected from their reading book should be analyzed as far as the above requirements will permit, and the pupils may also analyze their own sentences when properly written. The knowledge thus far attained must be applied to the correction of any errors into which pupils may fall in the use of language. Particular attention should be given to capitals, punctuation, and spelling.

CONSTRUCTION OF SENTENCES. See § 11.

ABBREVIATIONS.

MUSIC.

§ 40. NUMBERS.

Combinations.—See Sixth Grade.

Intellectual Arithmetic.—Require both oral and written analysis, and aim to secure logical thought, briefly and accurately expressed.

In reduction of fractions and denominata numbers, the limits of the multiplication and division tables should not be passed; the problems should be simple and practical.

Written Arithmetic.—Applications, both abstract and concrete, including the use of U. S. currency, expressed in dollars and cents. Oral analysis of problems given.

A few suggestive exercises are given here: What is the difference between six times four, and ninety-six divided by eight? and others like it. Beginning at five times three, count by threes, or fours, or fives, as far as seven times eleven. From thirty-six divided by four, count by fives till you reach a point nearest nine

times seven. An almost infinite variety of such exercises may be prepared by the teacher and assigned to the class.

Such exercises, together with those suggested under previous grades, will furnish a constant and thorough review of all the tables. See § 13, 14.

§ 41. GEOGRAPHY.

Primary Geography.—Much reliance must be placed upon map drawing, that the pupil may gain some more permanent knowledge than memorizing of the text will secure.

Map drawing should be confined to imitations of the maps before him, and credit should be given for a neat map of good proportions, without reference to the scale upon which it is drawn. The scale should be determined by the size of the paper, or of the slate used. It is better, however, to enlarge than to diminish the scale of the map used as a copy, provided only that proper proportions be preserved.

A little practice upon drawing of coast lines, rivers, and mountain chains will add beauty to the maps and increase interest in the study. Pupils in geography may imagine themselves travelers and be called upon to give direction of route, prominent natural objects observed, the location and size, as compared with their own city, of a few important cities, and the means of travel, whether by rail, boat or otherwise.

The following points are sufficient for the grade, and the selections should be made from their text books:

1. Define the natural divisions of land and water.
2. Name and locate the continents and the grand divisions.
3. Name and locate the political divisions of North America and Europe, and such natural divisions of the same as are mentioned in the text book.
4. Draw an outline map of Illinois and the States that bound it, from memory. Draw a map of all the other States east of the Mississippi from copy.
5. Bound each State, give its capital, and at least two important cities.

6. Give the physical features of Illinois, and general productions.

WRITING. See § 15.

DRAWING. See § 16.

§ 42. MISCELLANEOUS.

Classification of Animals.—Following the preceding grades in which animals, domestic and wild, have been considered, it is desirable that children should be taught to classify the animals about which they have learned, and here is introduced the general classification into vertebrates and invertebrates. The animals about which they have already learned something may now be re-examined with reference to the particular class to which they belong, and other examples of each of these classes may be presented. The distinguishing features, or rather such as are most readily recognized by the child, should be carefully considered.

Such as their structure—biped or quadruped—warm-blooded or cold-blooded—their methods of locomotion, walking, flying, swimming, or creeping,—the elements in which they live, air, earth, or water—their peculiar habits of life,—and their homes found upon the map.

Botany.—The text-book will be a sufficient guide.

MORALS AND MANNERS.

For instructions in Morals and Manners, the notes upon previous grades will be found sufficiently explicit, except upon the one point, that actions are to be judged by the intent of the actor. If the intent be always right and pure, there is no danger of the pupil's doing wrong. He may accidentally do an injury; but if his intent were right, he will not attempt concealment or evasion, but will, in a manly way, repair the injury, so far as lies in his power. See § 4.

PHYSICAL EXERCISES. See § 3.

FOURTH GRADE.

OUTLINE.

LANGUAGE AND VOCAL CULTURE.

Reading.—Intermediate Reader completed.*Spelling* from Speller, Reader and other text-books.*Phonics*.—Spelling all words by sound, and study of cognates in vowels and consonants.*Abbreviations and Punctuation*.*Language Lessons*.—Same as in previous grades, with the addition of description of objects by answering questions.*Definitions, Declamations, Recitations and Dialogues*.*Grammar*.—See special instructions.*Music*.—Practical knowledge of the intervals—seconds, thirds and fourths, in keys of C and D. Knowledge, both practical and theoretical, of *p*, *p.*, *m.*, *f.*, *ff.*, *dim.*, *crs.*, point of addition, triplets, *legato* and *staccato*. Writing scale in keys of C, D, E and F, in $\frac{2}{4}$ measure. Theoretical knowledge of the staff, clef, bar, double bar, also the intervals—seconds, thirds and fourths. Registers of the voice.*NUMBERS*.—Rudiments of Arithmetic, beginning at long division, to division of fractions, adding cancellation, G. C. D. and L. C. M.; Intellectual Arithmetic; rapid combinations.*GEOGRAPHY*.—Name and locate the political divisions of South America, Asia and Africa, and such natural divisions of the same as are given in text-book. Map Drawing.*WRITING AND DRAWING*.—*Writing*: Two books, the last to be marked for promotion. *Drawing*: Last half of Drawing Book No. 1.*MISCELLANEOUS*.—*Forms of Matter*. *Properties of Matter*—weight, elasticity, malleability and ductility. *Metals and Metallic Ores*. *Digestion*.*Personal Habits*.—As in previous grades, adding cleanliness of streets and premises.*Conduct*.—As in previous grades, with the addition of the cultivation of an even temper.*Physical Exercises*.

PROGRAMME.

Two Classes—Eight Class Exercises—Six General Exercises.

§ 43. LANGUAGE AND VOCAL CULTURE.

READING. See § 9.

SPELLING. See § 10.

PHONIC ANALYSIS. See § 37.

ABBREVIATIONS.

DECLAMATIONS AND RECITATIONS. See § 12.

Language Lessons and Grammar.—Pupils will learn to distinguish the subject, predicate, and object of simple sentences, and to expand the same by the use of word modifiers; the remaining tenses of the indicative mode, and all the tenses of the potential mode; the distinction of transitive and intransitive verbs, together with the active and passive voice of the same. They will be taught the use of the conjunction, preposition, and the interjection, and will have frequent exercises in the construction of sentences, both declarative and interrogative, involving the grammar and language of the grade, with careful attention to punctuation and analysis. They will learn the meaning of the following prefixes and suffixes, and be taught the etymological analysis of words in which they occur, viz.: *Prefixes*, ab, ad, ante, anti, e, ee, en, in, inter, de, dis, mis, post, per, pre, pro, ne, sub, hemi, semi, and up. *Suffixes*: s, es, en, er, est, al, able, ful, less, ly, ous, tion, ish, or, kin, let, ling, et, ship, dom, rick, ate, hood, cess, ie, ine. Correction of errors in speech, as determined by what the pupils have already learned.

MUSIC. See § 17.

§ 44. NUMBERS.

Written Arithmetic.—The pupil should now enter upon a thorough investigation of the “Science of Numbers,” as far as the grade extends. Principles are of chief importance—rules subordinate. The study of principles begets a strength ever present and reliable. Memorizing of rules confers but a feeble dependence.

A rule is a direction for performing an operation. It should be as concise as possible; but it must be so stated that it can be followed readily, and that no other than the correct result can be obtained when it is followed. It does not deal at all with

reasons ; it only furnishes a short road to results. A good rule, however, is of great value to one who understands thoroughly the principle, and it becomes especially valuable when drawn from the pupil's own reasoning. The intelligent teacher will not rest satisfied until his pupil, who may at first have been greatly aided by the use of a good rule, so masters the principle as to be independent of the rule.

A valuable lesson in the use of language may be derived from encouraging pupils to substitute original rules for those in the text-book. Careful criticism of these original rules will certainly promote clearness of thought and accuracy of expression, and will probably lead to the adoption of the rule of the book as the very best medium for the communication of his own thought.

The principle underlying every process in the fundamental operations should be taught with reference to their general application. It may be easier for the time to teach the pupil to place units under units and tens under tens, but the principle which pertains everywhere, is to place numbers of the same denomination under each other. It may be easier to say, "Begin at the right," or "Begin at the left," but true principle, in both simple and compound numbers, requires us to begin at lowest denomination in addition, subtraction and multiplication, and at highest in division, in order to facilitate reductions.

A few simple examples in compound numbers might be introduced to show the general application of principles.

As stated in a previous section, the greatest difficulty in the path of a pupil is to acquire facility in the application of principles learned, to examples of varied form and phraseology. The teacher should, therefore, study to present examples in great variety of form, still involving the principle underlying the lesson. Questions should be varied in form, even though the same answer be required, until the pupil forgets formulas, and lays fast hold of principles. This will require time, patience, and a great deal of ingenuity on the part of the teacher. Pupils should always receive some credit for correct analysis and correct reasoning, even if the answer be wrong. It is better to have correct reasoning and a wrong answer, than correct answers with no reasoning at all. The best thing of all is, correct answers

obtained by a correct process of reasoning. The process by which the result is to be obtained should be called for frequently during a recitation; and in all cases where a new example is given, some pupil of the class should be required to give the process of solution, with the statement of the principle involved. The thorough training of pupils in the earlier stages of study, especially in mathematics, saves much time in the future. See § 14.

INTELLECTUAL ARITHMETIC. See § 13.

Combinations.—Brief but rapid exercises will serve as awakeners if sprung suddenly upon a listless class.

§ 45. GEOGRAPHY.

Map Drawing.—Select a County or State having regular outlines. Select a scale with some convenient unit of measure. After determining the position of the cardinal points, draw dotted lines at right angles to each other, one representing the central meridian, the other the central parallel. Apply the scale to the meridian as many times as the distance represented by it is contained in the distance between the north and south points of the country to be drawn. Through the points of division, draw dotted lines at right angles to the meridian, which will represent parallels of latitude. Apply in like manner to the central parallel, such part of the scale as a degree of longitude is of a degree of latitude. Through the points of division draw dotted lines at right angles to the parallel. These will represent meridians. Designate the parallels and meridians by numbers expressing the position of points or places through which they pass, learned from an atlas.

The frame of the map being complete, represent by dots the prominent points of the boundary, the latitude and longitude of which have been previously learned. Having fixed in the mind the nature and direction of the boundary line, it should be drawn wholly from memory. The boundary completed, the most prominent natural features should be represented.

The pupil now has before him a map of his own construction, in which he cannot fail to be interested.

Teachers will find other methods equally valuable, and perhaps better, in their hands than this. The methods of triangulation, and of drawing by a fixed scale, taking some known dimension of State or Country as the basis, are very valuable.

In the outline, sufficient indication is given of the proper use to be made of the text-book. The use of the text-book is quite too general on the part of teachers. The subject to be treated should be very familiar to the teacher, so that the too common practice of memoriter recitations may be corrected. It is certain that very much of the detail of our text-books, if committed to memory, becomes burdensome, and is in itself of little value. The book must be prepared for general use, and hence much is written of other States and countries than our own, which it is hardly worth our while to memorize. With our own State, and the States with which we have most to do, the pupil should be made quite familiar. The same may be said of those countries with which the commerce of this country is carried on.

WRITING. See § 14.

DRAWING. See § 15.

§ 46. MISCELLANEOUS.

Kinds and Properties of Matter.—Define and illustrate the three general classes of matter; solids, liquids and gases. Define and illustrate some of their essential properties; weight or gravity, elasticity, malleability and ductility.

Metals and Metallic Ores.—Which are the precious metals? Which are the most useful of the metals? Which the heaviest? Which is a fluid?

Object lessons on iron, zinc, tin, copper, lead, mercury, silver, gold; on steel, brass, pewter, etc.

Methods of smelting ores may be briefly explained, and the localities from which metals are obtained should be pointed out upon the map.

Digestion.—The structure and office of the stomach, and of the alimentary canal should be explained and illustrated. Also, the following subjects: Mastication, the teeth, saliva, chyme, chyle, nutrition, the blood, blood-vessels, structure and office of the heart, impurities, waste of the system, how repaired, proper and improper food, eating too much, too fast, too often, late in the evening, irregularity of meals, dyspepsia, alcoholic drinks and their effect upon the stomach and the blood.

Conduct.—Too much stress can not be given to the cultivation of a modest demeanor, and to the correction of petulant habits. See § 4.

PHYSICAL EXERCISES. See § 3.

T H I R D G R A D E.

OUTLINE.

LANGUAGE AND VOCAL CULTURE.

Reading.—Fourth Reader.

Spelling.—From Speller, Reader, and other text-books.

Definitions.

Phonics.—Analysis of words.

Abbreviations and Punctuation.

Declamations, Recitations and Dialogues.

Language Lessons.—As in previous grades, with addition of epistolary composition.

Grammar.—See special instructions.

Music.—Practical knowledge of intervals—seconds, thirds, fourths and fifths—in keys of C, D and E. Practical and theoretical knowledge of *p*, *p*., *m.*, *f.*, *ff.*, *dim.*, *cres.*, *legato* and *staccato*. Writing scales in keys of C, D, E and F, in $\frac{2}{4}$ and in $\frac{3}{4}$ measure. Theoretical knowledge of staff, clef, bar, double bar, point of addition, triplets. Also, the intervals of seconds, thirds, fourths and fifths. Registers of the voice.

NUMBERS.—Intellectual Arithmetic, with same topics as taken in written arithmetic. Rudiments of Arithmetic completed.

GEOGRAPHY.—Through North America, omitting the mathematical geography. Map Drawing.

WRITING AND DRAWING.—*Writing:* Through two books, the last to be marked for promotion. *Drawing:* Book No. 2.

MISCELLANEOUS.—*Air and Water.* *Respiration and Circulation.* *City Government.*

Personal Habits.—As in previous grades, adding reasons for cleanliness of person, dress, dwellings, streets, and precautions against contagious diseases.

Conduct.—As in previous grades.

Physical Exercises.

PROGRAMME.

Two Classes.—Eight Class Exercises.—Four General Exercises.

§ 47. LANGUAGE AND VOCAL CULTURE.

READING. See § 9.

The Historical Sketches of authors, or of characters presented for study, should be made a part of the exercises in this and in succeeding grades. It is not desirable in these sketches that all the points touched by historians be brought out. In the sketches given of individuals, let the following points be made prominent:—When and where born, early advantages and how improved, early trials and how overcome, one or two anecdotes of early history that had a marked bearing upon the life of the man, what noteworthy acts have rendered the character famous? what traits of character are worthy of our imitation? where and when did they die?

Under the head of early advantages or early trials, will come the home influences, the school privileges and the associates of the child. Such facts should be gathered as would naturally interest children, and awaken just enough curiosity to lead the child to seek for further information in the histories within his reach. The child should be made to feel that the individual, whose character he studies, had a real and a human existence; that he was like men now-a-days in many, if not in all respects, and that a reproduction of the same character, though living in different times, and of course doing different things, is possible. There are boys living who will bear the same relation to the times in which they live, as did Columbus, Cortez,

Washington or Franklin to the times in which they lived. They will not do the same things, but they may do things as important. See § 18.

SPELLING. See § 10.

ABBREVIATIONS.

DEFINITIONS.

PHONIC ANALYSIS. See § 39.

GRAMMAR.

Though a text-book is used in this grade, instruction should be largely oral. It is not desirable that all the critical observations pertaining to the science should be studied by the pupil, at least not until a later period, when the whole subject is reviewed. Practice is worth more than precept in this study. Hence illustrative exercises of the rules given, especially in connection with the errors noticed in the every-day conversation of the children, will be of great value. If the study of grammar be extended so that what is learned is applied to all the speaking and writing of the child, it will be less dry and more valuable. Every recitation should include the use of language. As additional exercises, the pupil may be required to bring to the class a large number of words, which are names of objects—afterwards of objects limited somewhat, as those having life or destitute of life, etc., introducing thus a review of “The Oral Course.” Selecting an object, at first a living object, require simple sentences that shall assert what the object does, each sentence containing but one verb. Following this course of synthesis, other sentences may be prepared that shall include modifying words, first adjectives, then adverbs. Farther on, other words may be introduced, until all the parts of speech are understood in their general uses. Analysis of sentences constructed should follow, each pupil taking the sentence of some other pupil. Theory must in this grade give place to practice.

Pupils will be taught to distinguish and construct the ele-

ments of simple sentences, and so expand the same by the use of word and phrase modifiers. They will learn the remaining modes and the participles, and distinguish both voices of the same. Also, the meaning and use of the auxiliaries. Review all the parts of speech, and parse the same. They should have daily drill in the construction of sentences, and analysis of the same, and should be taught the meaning of the following prefixes and suffixes, and the etymological analysis of words in which they occur, viz.:—*Prefixes*: Arch, contra, con, extra, hyper, over, super, trans, fore, after. *Suffixes*: An, ian, ist, ee, uble, ile, ive, ent, ory, ical, ary, ic, ment, ance, age, wick. Correction of false syntax.

Pupils of this grade should receive special instruction in letter writing, including the form and manner of beginning and ending, with the date; paragraphs; dividing between syllables at the end of the line; margin; folding; superscription, sealing, etc.

MUSIC.—Instruction by Music Teacher.

DECLAMATIONS, &c. See § 12.

§ 48. NUMBERS.

WRITTEN ARITHMETIC. See § 14.

INTELLECTUAL ARITHMETIC. See § 13.

Topics treated to be the same as in Written Arithmetic.

COMBINATIONS.

§ 49. GEOGRAPHY.

Illustrations should be constantly given with the globe, in connection with the recitations from the text-book, and no definition should be passed by till the teacher has satisfactory evidence that the pupils understand clearly the object described.

MAP DRAWING.

WRITING. See § 15.

DRAWING. See § 16.

§ 50. MISCELLANEOUS.

Air and Water.—Component elements of air; of water. Relation of oxygen to life; to combustion; most abundant of all known substances.

Four or more lessons on the common properties and uses of water. Hard and soft water, water of the ocean, etc.

Simple experiments, illustrating the pressure of the air, may be performed in the presence of the class. Fill a tumbler perfectly full of water, place over its top a piece of writing paper, larger than the top of the tumbler, and then pressing down the palm of the hand upon the paper, raise and invert the tumbler and remove the hand; the pressure of the air upward will prevent the water from falling out. Take a quarter of a dollar, or any metal of like shape, cut a piece of paper of the same size, and holding them apart from each other, drop them to the floor, the metal will fall quickest; but place the paper exactly upon the metal and let them drop, they will fall in the same time, the money having removed the pressure of the air from beneath the paper. A glass tube may be placed in water and the mouth applied to the upper end, by drawing in the air the water will rise, owing to the downward pressure of the air upon the water outside the tube. Take a bent tube, fill it with water, and close one end with the thumb while the effort is made to draw up the water at the other end, and the effort will prove futile until the thumb be removed. Insert an open tube in a vessel of water, and closing the upper end with the thumb, remove the tube, and the water will remain in the tube.

Respiration and Circulation.—Very much instruction upon the laws of hygiene should be given at all times throughout the entire course. Here, as elsewhere, attention should be paid to the posture of children, to their cleanliness, to their habits of dress, of eating and of sleeping. But in this grade special

attention should be given to the organs of *Respiration and Circulation*; the lungs, the heart, and the following more specific topics: structure and office of the lungs, respiration, capacity of the lungs, exercises for their healthy development, obstructed action, dangerous habits of bending over desks, process of purifying the blood, different colors; carbonic acid of the breath, how formed, amount, composition of carbonic acid, weight, relation to life, experiment of a lighted candle in air that has been held in the lungs a few seconds, carbonic acid in wells, burning charcoal in a close room, carbonic acid in the stomach, soda fountains, raising bread, ventilation, inhalation of gas and its deleterious effects.

City Government and its Officers.—This topic embraces only our own city, and should embrace the different departments of the city government, executive, legislative and judicial (Mayor, Common Council and Courts). Also, the different Boards: Board of Education, Board of Public Works, Board of Health, Board of Fire and Police, Board of Bridewell Commissioners, with the number of members in each, and their general duties. See § 4.

PHYSICAL EXERCISES. See § 3.

SECOND GRADE.

OUTLINE.

LANGUAGE AND VOCAL CULTURE.

Reading.—Fifth Reader, first half.

Spelling.—From Speller, Reader, and other text-books.

Phonics.—Analysis of words.

Definitions, Abbreviations.

Declamations, Recitations and Dialogues.

Language Lessons.—As in previous grades, adding forms of business papers.

Grammar.—See special instructions.

Music.—Same as in previous grades, with addition of Key of G. Interval

of sixth, transposition and modulation, and ascending chromatic scale. Registers of the voice.

NUMBERS.

Intellectual Arithmetic completed.

Written Arithmetic.—Fundamental rules, properties of numbers, common and decimal fractions, denominate numbers, aliquot parts, percentage and its applications to profit and loss, commission and brokerage, U. S. Securities, stock and specie investments, fire insurance, taxes, customs and simple interest. Forms of bills and receipts. Rapid combinations.

GEOGRAPHY AND HISTORY.—*Geography:* Through Asia. Map drawing. *History:* Through the Revolution.

WRITING AND DRAWING.—*Writing:* Through two books, the last to be marked for promotion. *Drawing:* Book No. 3.

MISCELLANEOUS.—*Circular Motion.*

Heat.—Winds, rain, hail, snow, dew and frost.

Animal Heat.—Hygiene of Exercise.

Personal Habits.—As in previous grades.

Conduct.—As in previous grades.

PROGRAMME.

Two Classes—Six Class Exercises—Four General Exercises.

§ 51. LANGUAGE AND VOCAL CULTURE.

READING. See § 9.

In this grade and in the first grade, I would recommend the occasional practice of writing out the reading lesson in full, and of reading the same from the manuscript. The manuscripts should also be carefully examined as to chirography, spelling, punctuation, margin, and general divisions of the lesson into paragraphs.

SPELLING. See § 10.

DEFINITIONS.

ABBREVIATIONS.

PHONIC ANALYSIS. See § 39.

Grammar.—Much time may be profitably spent in correction of False Syntax, and in the application of rules to the

corrections made. Pupils may be encouraged to criticise each other in a proper spirit. Pupils will be taught to analyze simple, complex and compound sentences, and to use the same in composition. They will review Etymology, and will be taught the derivation of words from such roots as themselves constitute words in regular and authorized use, and use such derivatives in composition. Correction of false syntax.

The following forms of Analysis are given as aids in simplifying the work :

Analysis in Grammar may be defined as the resolving of a sentence into its principal and subordinate parts—called elements.

The *Elements* of a sentence are the *words, phrases, or clauses,* which enter into its structure.

By a *Word Element* is meant a single word used as a constituent part of the sentence.

By a *Phrase Element* is meant two or more words not forming a proposition used as a noun, adjective, or adverb.

By a *Clause Element* is meant a proposition used as a noun, adjective, or adverb.

The *Elements* of a sentence may be classified

As *Principal*—Subject and predicate;

And *Subordinate*—Adjective, objective and adverbial.

To the *Subject* belongs the *adjective* element.

To the *Predicate* belong the *objective* and *adverbial* elements.

The relation of the subordinate to the principal elements may be represented thus:

Subj. } Adj. Pred. } Obj.
 + + Adv.

When the subordinate elements are joined to the principal, the terms *Modified Subject* and *Predicate* may be used to distinguish them from the subject and predicate *unmodified.*

The *Subject* may be a word, as—*Birds sing.*

a phrase, as—*To see the sun is pleasant.*

a clause, as—*That you are here, is well.*

The *Predicate* may be a verb, as—*Dogs bark.*

a verb and adjective, as—*Mad dogs are dangerous.*

a verb and noun, as—*A dog is an animal.*

The *Adjective Element** of the sentence is joined to the subject, and may be a *word, phrase, or clause* equivalent to an adjective.

To the *Word Class* belong:

The Article, as—*The sun.*

The Adjective, as—*Good books.*

The Possessive, as—*John's horse.*

The Appositive, as—I, *John.*

The Participle, as—*The sun shining.*

* To avoid confusion in terms, adjective *words* and *phrases* belonging to other nouns in the sentence than the subject should be termed adjective *modifiers*, not *elements*.

So also, adverbs and adverbial phrases, when joined to participles, adjectives, or adverbs, should be termed *adverbial modifiers*.

To illustrate :

"A boy should understand his mother tongue well before he enters upon the study of a dead language."

This sentence as a whole contains six elements; two principal—"boy," and "should understand;" one adjective—"a;" one objective—"his mother tongue;" two adverbial—"well," and the clause "before, etc." This analysis of the *sentence as such* is deemed complete; but it may properly be extended so as to include the objective phrase and adverbial clause, thus: Of the objective phrase, "tongue" is the basis to which are joined the adjective modifiers "his" and "mother." (These two words are not adjective *elements*, since they are a part of the *objective element* of the sentence.)

Of the clause, "before" is the connective, "he" the subject, "enters" the predicate. To the verb is joined the prepositional phrase "upon the study of a dead language," an adverbial element of the clause; "study," the object of the leading preposition is the basis, to which are joined the article "the," and prepositional phrase, "of a dead language," adjective modifiers. To language are joined "a" and "dead," adjective modifiers.

To the *Phrase Class* belong:

The Prepositional, as—Birds of *beautiful plumage*.

The Infinitive, as—A desire *to see you*.

The Participial, as—The sun *shining in splendor*.

The Appositional, as—Washington, *the father of his country*.

To the *Clause Class* belong such as are connected by the relatives *who*, *which*, *what*, *that*, *as*, *whom*, *whose* and their compounds.

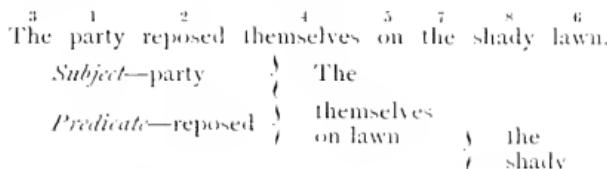
The *Objective Element* completes the meaning of an active transitive verb, and is equivalent to a noun in the objective case. It may be a *word*, *phrase*, or *clause*.

The *Adverbial Element* is joined to the verb of the sentence, and is equivalent to an adverb. It may be a *word*, *phrase*, or *clause*.

Clauses may be classified as *substantive*, *adjective*, and *adverbial*, according to their use in the sentence as a noun, an adjective or adverb.

They may also be classified by their connections as *conjunctive*, *relative* and *adverbial*.

The following diagram of analysis indicates to the eye not only the proper relation of the elements of a sentence, but the syntax of each word—the brace in every case separating a dependent word from its principal:



(The figures indicate the analytical or syntactical order of parsing, as shown by the diagram.)

1 2 3 4 6 5 7 9 8
She gazed long upon the clouds in the west,

10 11 12 14 12 15
while they were slowly passing away.

Principal proposition.

Subject—She

Predicate—gazed { long { upon clouds { the { in west { the { while away { (Adverbial clause.)

*Clause.**Connective*—while*Subject*—they*Predicate*—were passing { while
 { slowly
 { away

Or if preferred, the following form of analysis is recommended:

(1.)	party		reposed		themselves
	The		on lawn		
			the shady		

(2.)	She		gazed		
		long	upon clouds		
				the in west	
					the
			while		
				they	were passing
					slowly away.

WRITTEN ABSTRACTS. See § 19.

DECLAMATIONS AND RECITATIONS. See § 12.

Music.—Instruction given by Music Teacher.

§ 52. NUMBERS.

WRITTEN ARITHMETIC. See § 13.

The principles involved in Decimals and in Compound Numbers are precisely the same, so far as fundamental rules are concerned, as those previously learned in Simple Numbers, and as this grade calls for a review of what has been previously learned in great measure, it is a good plan so to connect Simple Numbers, Compound Numbers and Decimals, as to show clearly the identity of principles. A thorough mastery of Decimals will be of great service in Percentage, and no superficial study will aid in the end, however rapidly the pupil may appear to advance for the time being.

INTELLECTUAL ARITHMETIC. See § 14.

COMBINATIONS.

Forms of Bills and Receipts.—This exercise may serve as a *Writing* exercise and as an exercise in *Arithmetic*, the pupil being encouraged to draw bills that shall include work required in simple mercantile transactions.

§ 53. GEOGRAPHY AND HISTORY.

Geography and Map Drawing.—Lessons in Geography should be accompanied by brief historical sketches of important events connected with the different countries, and by some allusions to ancient geography, and the changes through which the countries have passed in their governments, boundaries, etc.

One of the most common faults in teaching Geography, is the practice of requiring pupils to learn the names of a large number of unimportant places, the exact population of unimportant cities, etc., etc.

One of the best modes of reciting history, geography, etc., is by the use of topics. Thus, in geography, a pupil passes to an outline map, drawn on the black-board, with a set of topics in his hand, as boundaries, rivers, mountains, climate, surface, soil, productions, commerce, etc., and proceeds to describe the country assigned, stating all he recollects under each topic. When his description is completed, other members of the class are called on for corrections and additions, and the teacher makes such suggestions as the case may require. This mode of reciting by topics leaves the pupils in a great degree to their own resources, secures a more thorough and systematic preparation of the lessons, and furnishes important aid in imparting that discipline of mind which is more valuable than knowledge. It will be found particularly adapted to reviews. See §§ 41 and 45.

History.—While the class is reciting History, some pupil should stand by the Outline Map and point out to the class the places spoken of.

Care should be taken that the memory of the child be not

burdened with trifling and unimportant facts. The leading points should be seized upon and their relation to other leading facts be understood. The most prominent points in United States History should be associated with dates. In regard to others, it matters but little whether the exact date be remembered.

WRITING. See § 15.

DRAWING. See § 16.

§ 54. MISCELLANEOUS.

Laws of Motion.—Attention should be given mainly to the effects produced on the motion of bodies acted upon by more than a single force; to the centripetal and centrifugal forces; and to the manifold cases of resultant motion found in all cases of sailing a boat, flying a kite, rowing, flying, swimming, etc., etc. See § 18.

Meteorology.—Six or more oral lessons on winds, clouds, fogs, dew, frost, moisture settling on a vessel of cold water in a warm room, rain, snow, hail, ice.

Exercise.—Its use and its abuse. Care about exposure after violent exercise. Danger of checking perspiration suddenly. Clothing suitable for exercises of different kinds. Exposure to heat of the sun. Heat and light of the sun under proper conditions productive of good results. Bathing in clear sunlight as good as a water-bath. See § 4.

PHYSICAL EXERCISES. See § 3.

FIRST GRADE.

OUTLINE.

LANGUAGE AND VOCAL CULTURE.

Reading.—*Selections* from Fifth Reader, and from History or other text-books.

Spelling.—From all text-books and Speller, and miscellaneous lists of words.

Phonics.—Careful review of previous work and Analysis.

Definitions, Abbreviations in general use.

Declamations, Recitations and Dialogues.

Language Lessons.—As in previous grades, adding Composition Writing.

Grammar.—See special instructions.

Music.—Same as in previous grades, adding all the intervals of the diatonic scale in the keys of C, G, D, A, E and F. *Sforzando* and *pulse*.

Writing of any scale required, in $\frac{2}{4}$, $\frac{3}{4}$, $\frac{4}{4}$ and $\frac{6}{8}$ measure. Syncopation.

Simple rules of Harmony, so that the pupil can construct a simple four-part composition. Chromatic and minor scales. Registers of the voice.

NUMBERS.—*Written Arithmetic*: Partial payments, problems in interest, compound interest, discount, banking, exchange, equation of payments and accounts, ratio and proportion, partnership, bankruptcy, analysis, alligation medial, involution, evolution limited to square root, mensuration in its applications to lines, areas of triangles, quadrilaterals and circles, and to the cubical contents of rectangular and spherical solids, pyramids and cones, simple problems in weight and pressure of water and air, in velocity of sound, light, and falling bodies, and in use of simple lever.

Elements of Geometry.—Frequent practice in solution of problems mentally. Exercises designed to promote facility and accuracy in calculations.

GEOGRAPHY AND HISTORY.—*Geography* completed. *Map Drawing*. *History* completed and reviewed.

WRITING AND DRAWING.—*Writing*: Three books, the last to be marked for promotion. *Drawing*: Book No. 4.

MISCELLANEOUS.—*Sun, Moon, Earth*.

Light.—*Hygiene of Light*.

Review of Grammar Grades.

Personal Habits.—As in previous grades.

Conduct.—As in previous grades.

PROGRAMME.

One Class; if the class be large it may with propriety be separated into two sections, that the teacher's time may be fully employed, and yet the class have opportunity for study.—*Four Class Exercises*.—*Four General Exercises or Eight Class Exercises if there be but one class*.

§ 55. LANGUAGE AND VOCAL CULTURE.

READING. See § 9.

Spelling.—Special attention should be given to the analysis of derivative and of compound words, with the meaning and use of the more common prefixes and suffixes. A few rules of

spelling should be taught, and their application illustrated by familiar examples. See § 10.

DEFINITIONS.

PHONIC ANALYSIS. See § 39.

Grammar.—The instruction given in the previous grade may be very profitably extended here, still keeping Practice ahead of Theory. Other words than those given in the text-book should be declined, conjugated or compared, that the pupil may acquire facility in the use of language. It is well in all conjugation of verbs, to construct a simple sentence, as,

“*I am* at school.”

“*Thou art* at school,” etc.

“*I have written* my lesson.”

“*Thou hast written* thy lesson,” etc.

Pupils should take a thorough, systematic and philosophical review of English Grammar, prominence being given to Language and Composition. Derivation of words as in the second grade. At least half the time appropriated to grammar in the first grade, should be spent in parsing and analyzing select pieces from Milton, Pope, and other authors, embracing the different varieties of style. The extracts required for this purpose may be selected from the reading book.

No exercise should be regarded as complete and satisfactory that does not analyze the thought as well as the language of the writer.

DECLAMATIONS AND RECITATIONS. See § 12.

Music.—Instruction given by Music Teacher.

§ 56. NUMBERS.

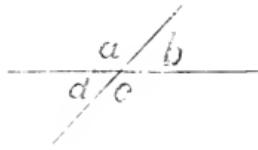
WRITTEN ARITHMETIC. See § 13.

A very careful review of the arithmetic, so far as its more practical portions are concerned, should be given.

Elements of Geometry.—Exhibiting a cube, call attention to its surfaces, its edges and its corners or vertices. Explain what is meant by a geometrical solid, a geometrical surface, line and point. If the solid be divided into parts, each part is a solid, each part of a surface is a surface, and each part of a line is a line. A point has no parts. A point is no part of a line. A line is no part of a surface. A surface is no part of a solid. A line is the path of a moving point. A surface is the *locus* (Latin for *place*) of a moving line, and a solid is the *locus* of a moving surface. A line is straight, broken or curved, according as the point is moved in the same direction, changes its direction occasionally, or changes its direction constantly. Exhibiting a cylinder and a cone, show that each has plane (flat) and curved surfaces. In these surfaces straight, broken or curved lines may be traced. Show how a broken line leads into a curved line. All parts of a straight line have the same direction. The various directions of a straight line are either vertical, horizontal or slanting.

A clock face with its hands will illustrate angles. At six o'clock the hands form a flat angle, equal to two right angles. At three o'clock the hands form a right angle, which is half a flat angle. At two o'clock the hands form an acute angle, which is smaller than a right angle. At four o'clock the hands form an obtuse angle, which is greater than a right angle. Whenever the two hands lie in the same direction they form a flat angle. If one of them be moved half way around toward the other they will then form a right angle.

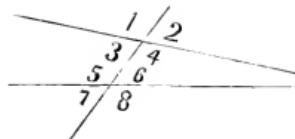
Combinations of Straight Lines.—Two lines which have the same direction, but never meet, are parallel; two lines which have not the same direction, but intersect each other, will form four angles, either all right angles, or two acute and two obtuse. The vertical angles will be equal, and the sum of either two adjacent angles will be equal to two right angles. Of the two adjacent angles, each is said to be supplementary to the other.



a.c and *b.d* are vertical angles; *a.b*, *a.d*, *d.c* and *b.c* are pairs of adjacent angles; *a* is supplementary to *b*, also to *d*, and the reverse.

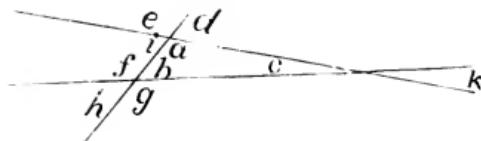
Three straight lines, all parallel three pairs ; or two parallel and the third secant, eight angles—twenty-eight pairs of angles. Eight pairs of adjacent angles; four pairs of vertical angles—find them. In addition to these, there are four pairs of *corresponding angles*— a,e , b,f , c,g , d,h ; four pairs of alternate angles, $a.h$, $b.g$, $c.f$, $d.e$; four pairs of exterior or interior angles on the same side, $a.g$, $b.h$, $c.e$, $d.f$; and four pairs of mixed angles, $a.f$, $b.e$, $c.h$, $d.g$.

If the intersected lines are not parallel, the angles still have the same names. Point out the twenty-eight pairs in the following :



If the three lines are so constructed as that no two are parallel, and that they intersect each other, not at the same point, then a triangle is constructed, and the names of the angles are as follows :

a, b, c , interior angles.
 d or i, f or g , exterior angles.



Theorems about Three Straight Lines.—*First:* If one straight line is parallel to each of two others, those two are parallel. *Second:* If a straight line intersect two parallels, corresponding angles are equal; alternate angles are equal; exterior and interior angles on the same side, and mixed angles, are supplementary.

Four straight lines may be drawn, so that :

First—All shall be parallel.

Second—Two parallel and two not.

Third—No two parallel.

Fourth—Various intersections.

In *First Form* how many pairs?



In *Second Form*:

THEOREM I.—The three interior angles of a triangle are together equal to a flat angle or two right angles.

$$a=d \qquad b=e \qquad c=c$$

$d+e+c=a+b+c$, or a flat angle, or two right angles.

THEOREM II.—The exterior angle of a triangle is equal to the sum of the two opposite interior angles.

$$g+d=2 \text{ right angles.}$$

$$c+d+e=2 \text{ right angles.}$$

$$g+d=c+d+e.$$

$$g=c+e.$$

In the following figures, mark and name angles. How many pairs? How many pairs which are supplementary?



Trapezoid.



Trapezium.



Parallelogram.



Rectangle.



Square.

Divide the last two figures into two right-angled triangles each?

Special Theory of Triangles:

Obtuse-angled,	{ Isosceles, Scalene.
Right-angled,	{ Isosceles, Scalene.
Acute-angled,	{ Isosceles, Scalene. Equilateral.

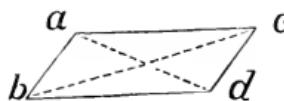
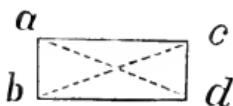
(Construct to meet requirements.)

What angles are equal in Isosceles Triangles?

What in Equilateral Triangles?

Special Theory of Parallelograms:

(Illustrate by parallelograms of cloth.)



Triangles $a\ b\ c$ and $b\ c\ d$ are alike in sides and angles. Opposite sides of a parallelogram are equal. What is the sum of the angles of a parallelogram?

Parallelograms are either oblique-angled or right-angled. If the sides are all equal, a rhombus, or a square is formed. Diagonals of a rectangle or of a square are always equal. Diagonals of a rhombus or of a square intersect each other at right angles. Diagonals of all parallelograms mutually bisect each other.

Define a quadrilateral. How many angles in a quadrilateral? To how many right angles are they equal?

Up to this point all drawing should be free-hand, but now instruments may be used in construction. These should be a ruler; one triangle, having one right angle, and the other two angles, 30° and 60° ; a second triangle, with angles, 45° , 45° and 90° . Let all these be tested as to straightness.

1. With the triangles draw parallel lines.
2. Bisect a line by making it the diagonal of a parallelogram.
3. Draw, and let fall perpendiculars. Draw right-angled triangles.
4. Draw the three kinds of isosceles triangles.
5. Bisect a line by making it the base of an isosceles triangle, and letting fall a perpendicular from the vertex.
6. Bisect a line with two isosceles triangles upon it as a base.

All the constructions required above may be made with the triangles and ruler only. After the figures are made, it will be well to measure them with a scale, preparatory to mensuration.

INTELLECTUAL ARITHMETIC. See § 14.

COMBINATIONS.

FORMS. See § 52.

GEOGRAPHY AND HISTORY. See §§ 41, 45.

WRITING.

DRAWING.

§ 58. MISCELLANEOUS.

Popular Astronomy.—Ten or more elementary lessons. The earth—its size and motions. Change of seasons—how caused; difference in the length of days and nights at different seasons of the year; length of the longest day at the equator; at the tropics; at the polar circles; at the poles. Tides. Solar system. The sun—its office, distance, magnitude, spots. The moon—its size, distance, telescopic appearance, different phases. Eclipse of the moon, of the sun.

Much of this may be pursued in connection with the study of Mathematical Geography.

Light.—Its sources, its use. Structure and action of the eye. Danger of injuring the eyes from excessive use; from imprudent exposure to light; from reading in twilight; from reading fine print. Danger of allowing young children to look steadily at a light. Average distance at which a book should be held from the eye; effect of holding a book too near the eye. How cats and other animals see in the night. See § 4.

PHYSICAL EXERCISES. See § 3.

HIGH SCHOOL CLASSES.

OUTLINE.

LANGUAGE AND VOCAL CULTURE.—*Reading:* Sixth Reader.

Phonic Analysis.

Declamations and Recitations.

Spelling.—Oral and written, from all the text-books.

Rhetorical and Grammatical Analysis.—Composition writing.

Music.

NUMBERS.—Arithmetic, Philosophy of; Algebra to Quadratics; Intellectual Arithmetic.

GEOGRAPHY AND HISTORY.—Physical Geography. Outlines of General History. National and State Governments.

WRITING AND DRAWING.—Writing in Copy-Book and in Writing Speller. Drawing from cards.

PHYSIOLOGY.—Elements of.

MISCELLANEOUS.—*Morals and Manners:* As in previous grades.

Physical Exercises.—As in previous grades.

Elements of Philosophy (sound, light, heat, electricity and magnetism).

Geology, Elements of.

PROGRAMME.

Same as for First Grade Class.

§ 59. LANGUAGE AND VOCAL CULTURE.

READING. See § 9.

SPELLING. See § 10.

DEFINITIONS.

PHONIC ANALYSIS. See § 39.

RHETORICAL AND GRAMMATICAL ANALYSIS.

Composition Writing.—See § 11. And yet this grade should cover more than is intended in the other grades. The pupil's general knowledge, and his specific knowledge of Grammatical Analysis, will enable him to take up topics outside of his text-book studies, and to treat them originally. His compositions should now become essays, and he should be called upon to read them before his class.

Music.—Instruction given by Music Teacher.

§ 60. NUMBERS.

Algebra.—This introduces new matter to the pupil, and matter exceedingly dry, unless seasoned with the life and tact of the teacher.

Arithmetic.—What is gained in a general way from the study of Algebra may be practically applied to a review of Arithmetic, and the pupil, by a general solution of algebraic problems, may form his own rules for solving the same arithmetically.

Intellectual Arithmetic.—All problems presented in Algebra and Arithmetic should be solved as far as possible mentally.

§ 61. GEOGRAPHY AND HISTORY. See § 53.

Physical Geography.—While this subject is treated of separately, it still may be very profitably associated with Political Geography, and the latter may be reviewed while the former is studied.

National and State Governments.—The text-book will be completed and reviewed.

PHYSIOLOGY.

WRITING.

DRAWING. Book 5 of Series.

§ 62. MISCELLANEOUS.

Sound.—How produced. Illustrate by a stretched cord or some other vibrating body. Action on the ear. High and low sounds—how produced. Relation of the air to sound. Velocity of sound. The human voice. Varieties of the human voice. Name twenty different kinds of sounds. Echoes; whispering gallery; ear-trumpet. Musical instruments; bells. Cause of color. Twilight.

Heat.—In expanding the following topics, explain and apply the principles, and illustrate them as far as practicable. Sources of heat; sensations of heat and cold; burning-glasses; good and poor conductors; different kinds of clothing; double windows; ice houses; use of a fan; protection of the ground by snow. Contraction and expansion; putting tire on a wheel; fire balloons; thermometer; glass cracked by hot water; why clocks go faster in cold weather than in warm; how to regulate a pendulum clock when it gains or loses time; freezing water; heat absorbed by change from solid to liquid state, and from liquid to gaseous; freezing mixture of salt and ice; cooling a heated room by sprinkling water on the floor. Boiling water; how the force of steam is produced. Flame—how produced. Carbon. Flame of a candle—why no combustion in the centre; wick—why not consumed; use of circular wick in astral and solar lamps; use of glass chimney; of small hole in top of lamp; gas used in lighting buildings; use of a blower in kindling a fire; action of a common chimney; proper construction; advantages of stoves as compared with open fire-places, disadvantages.

Electricity and Magnetism.—Illustrate the production of electricity, and properties of attraction and repulsion, by a rubber ruler rubbed briskly with a piece of woolen cloth. Conductors and non-conductors; lightning and lightning conductors; Franklin's kite.

Properties of the magnet. Magnetic needle, mariner's compass, horseshoe magnet, telegraph.

Upon these topics what is needed is, to call the attention of

the pupil to the phenomena of nature, and to draw the lessons from these rather than from any scientific treatise. In the matter of electricity, the flying apart of the hair when combed briskly in cold weather, the effect of water in making it smooth, the effects of strokes of lightning upon objects that the children have seen; and in magnetism, the use of the magnetic tack hammer, the effect of a magnet as shown upon a little pocket compass, etc., etc., will interest and profit the pupils more than merely scientific treatises. *What is done*, is first to be learned. The *theories* regarding the methods may be neglected until the science is studied more fully.

Geology.—Five or more oral lessons on the geological formation of the United States; coal fields; mineral ores; geology of Illinois; fossiliferous rocks.

PHYSICAL EXERCISES. See § 3.

MORALS AND MANNERS. See § 4.

COURSE OF STUDY OF HIGH SCHOOL.

	FIRST TERM.	SECOND TERM.	THIRD TERM.
First Year.	Algebra. Physical Geography. Latin.	Algebra. Physiology. Latin.	Algebra. Physical Geography and Physiology. Latin.
Second Year.	Geometry, Natural History. Latin. General History. Greek (optional, in place of one of the English branches).	Geometry. Natural History and Botany. Latin. General History. Greek (optional, in place of one of the English branches).	Geometry. Botany and Natural History. Latin. General History. Greek (optional, in place of one of the English branches).
Third Year.	Trigonometry. Mechanics. Latin, or German, or French. Rhetoric, English Literature. Greek (optional).	Astronomy. Physics. Latin, or German, or French. English Literature. Greek (optional).	Trigonometry and Astronomy. Physics and Mechanics Latin, or German, or French. English Literature. Greek (optional).
Fourth Year.	Mental Science. Chemistry. Latin, or German, or French. Civil Government. Greek (optional).	Mental Science, Bookkeeping. Geology. Latin, or German, or French. Political Economy. Greek (optional).	Mental Science, Bookkeeping. Geology and Chemistry. Latin, or German, or French. Political Economy. Greek (optional).

Composition, Drawing and Reading through the course.

Those in preparation for College, who desire it, can omit the English branches, except the requisite Mathematics, and complete the course in three years.

Pupils from the High School Classes will commence with the studies of the second year, taking German instead of Latin.

COURSE OF STUDY OF NORMAL SCHOOL.

	FIRST TERM.	SECOND TERM.	THIRD TERM.
First Year.			
	Geometry.	Geometry.	Chemistry.
	Natural Philosophy.	Natural Philosophy.	Botany.
	Rhetoric.	English Literature.	English Literature.
	Physiology. <small>(Familiar lectures on personal habits).</small>	Botany.	English Classics : Addison, Scott, Irving, Longfellow, <small>One work of each.</small>
	Astronomy.	History of Education.	
	Higher Algebra.	Mental Science.	Method of Teaching.
	Chemistry.	Natural History.	Review of Common Studies.
	English Classics : Julius Cæsar.	English Classics : Milton, Macaulay, &c.	
	Theory and Practice of Teaching, during entire course. Elocution, during entire course. Music, during entire course. Composition, during entire course. Drawing, last four terms.		
Second Year.			

APPENDIX.

TEXT-BOOKS USED IN THE HIGH SCHOOL.

GENERAL DEPARTMENT.

1. Preparatory Studies reviewed, using the text books authorized in the District Schools.
2. Warren's Physical Geography.
3. Willson's Universal History.
4. Ancient Geography, in connection with History.
5. Ray's Higher Arithmetic.
6. Robinson's University Algebra and Elementary Algebra.
7. Davies' Legendre.
8. Plane and Spherical Trigonometry.
9. Mensuration.
10. Gillespie's Surveying.
11. Navigation.
12. Hanaford & Payson's Elementary Bookkeeping.
13. Gray's Botany.
14. Elementary Astronomy and Colbert's Astronomy.
15. Huxley & Youman's Physiology.
16. Norton's Natural Philosophy.
17. Youman's New Chemistry.
18. Dana's Geology and Mineralogy.
19. Quackenbos' Rhetoric.
20. Wayland's Political Economy.
21. Townsend's Analysis of Civil Government.
22. Haven's Mental Philosophy.
23. Etymology.

24. Spalding's English Literature.
25. Analytical Sixth Reader.
26. Drawing.
27. Vocal Music; Song Garden, Third Book, and Graded Songs, No. Six.
28. Woodbury's German Series.
29. Schiller's William Tell, and Schiller's Maria Stuart.
30. Fasquelle's French Course.
31. Chapsal's Literature Francaise.
32. Goethe's Egmont.
33. Campbell's New German Course.

CLASSICAL DEPARTMENT.

- Nos. 1, 2, 3, 4, 5, 6, 7, 15, 16, 24, 25, 26, 27.
 Harkness' Latin Grammar.
 Harkness' Latin Reader.
 Arnold's Latin Prose Composition.
 Hanson's Latin Prose.
 Bowen's Virgil.
 Andrews' Latin Lexicon.
 Anthon's Classical Dictionary.
 Crosby's Greek Grammar.
 Crosby's Greek Lessons.
 Arnold's Greek Prose Composition.
 Felton's Greek Reader.
 Boise's Xenophon's Anabasis.
 Owen's Homer's Iliad.
 Liddell & Scott's Greek Lexicon.

HIGH SCHOOL CLASSES.

- Warren's Physical Geography.
 Huxley & Youman's Physiology.
 Robinson's Elementary Algebra.
 Anderson's Outlines of General History.
 Alden's Citizen's Manual.

TEXT-BOOKS USED IN NORMAL SCHOOL.

- Preparatory Studies reviewed, using text-books authorized
in District Schools.
Ray's Higher Arithmetic.
Davies' Legendre.
Peabody's Astronomy and Colbert's Astronomy.
Huxley & Youman's Physiology.
Norton's Natural Philosophy.
Youman's New Chemistry.
Tenney's Natural History.
Spalding's English Literature.
Quackenbos' Rhetoric.
Haven's Mental Philosophy.
Analytical Sixth Reader.
Song Garden—Third Book.
Graded Songs—No. 6.

TEXT-BOOKS USED IN THE DISTRICT SCHOOLS.

- Analytical Series of Readers.
Analytical Speller.
Anderson's History of the United States.
Greene's Introduction to Grammar.
Warren's Common School Geography.
Mitchell's Primary Geography.
Robinson's Practical Progressive Arithmetic.
Walton's Primary and Intellectual Arithmetics.
Youman's First Book in Botany.
Payson, Dunton & Scribner's Writing Books.
Webb's Charts.
Philbrick's Primary School Tablets.
Webster's Primary Dictionary.
Bartholomew's Drawing Books.
Song Garden, First and Second Books.
Blackman's Graded Songs, Nos. 1, 2 and 3.
Movable Cards with Words and Letters for the use of the
Tenth Grade.

Dictionaries.—Webster's and Worcester's Quarto Dictionaries shall be used as authority in Definitions, and Webster's Dictionary as authority in Orthography and Punctuation; but the orthography of any scholar, in exercises of composition, shall not be deemed incorrect if in accordance with either Webster or Worcester.

TEXT-BOOKS USED IN EACH GRADE.

TENTH GRADE.

Webb's Cards, Nos. 1, 2, 3, 4, 5, 6, 7 and 8.
Analytical First Reader.

NINTH GRADE.

Webb's Cards, reviewed.
Philbrick's Tablets, Nos. 15 and 16.
Analytical First Reader, completed.

EIGHTH GRADE.

Analytical Second Reader.
Graded Songs, No. 2, to page 15.

SEVENTH GRADE

Analytical Third Reader, first half, with half of the Introduction.

Walton's Primary Arithmetic, to page 50.

SIXTH GRADE.

Analytical Third Reader, completed.
Primary Arithmetic, completed.
Blackman's Graded Songs, No. 2, completed, and No. 3, to page 39.
Writing Book—Payson, Dunton & Scribner's, Nos. 2 and 3.

FIFTH GRADE.

Analytical Intermediate Reader, first half.
Analytical Speller—Sections 76-79, 97-105, 107, 111, 112, 197-203, 231-235, 261, 262.
Blackman's Graded Songs, No. 3.
Mitchell's Primary Geography.

Youman's First Book in Botany.

Writing Book—Payson. Dunton & Scribner's, Nos. 3 and 5.

Walton's Intellectual Arithmetic, from page 22 to page 48.

FOURTH GRADE.

Analytical Intermediate Reader, completed.

Analytical Speller—Sections 68, 89, 106, 108, 171-179, 229-
244-250, 263, 264.

Song Garden, Second Book.

Robinson's Rudiments of Arithmetic, to Division of Fractions,
page 94.

Walton's Intellectual Arithmetic, from page 48 to page 90.

Mitchell's Primary Geography, completed.

Writing Book—Payson. Dunton & Scribner's, Nos. 6 and 4.

THIRD GRADE.

Analytical Fourth Reader.

Greene's Introduction to Grammar, to page 131.

Analytical Speller—Sections 67, 116-152, 240-243, 265-270.

Song Garden, Second Book.

Robinson's Rudiments of Arithmetic, completed.

Walton's Intellectual Arithmetic, to page 130.

Warren's Common School Geography.

Writing Book—Payson. Dunton & Scribner's, Nos. 12 and 9.

SECOND GRADE.

Analytical Fifth Reader.

Analytical Speller. Sections 75, 91-94, 181-196, 204-220.

Song Garden, Second Book.

Greene's Introduction to Grammar, to page 189.

Robinson's Practical Arithmetic, to page 247.

Walton's Intellectual Arithmetic, review to page 130.

Warren's Common School Geography.

Anderson's U. S. History, through Revolution.

Writing Book—Payson. Dunton & Scribner's, Nos. 4, 7 and 5.

FIRST GRADE.

Analytical Fifth Reader. Selections.

Analytical Speller—Sections 87, 221-228, 230, 237-239,
271-280.

Greene's Introduction to Grammar, completed.

Song Garden, Second Book.

Robinson's Practical Arithmetic, completed.

Walton's Intellectual Arithmetic, completed.

Mark's Elements of Geometry.

Warren's Common School Geography, completed.

Anderson's U. S. History, completed.

Writing Book—Payson, Dunton & Scribner's, Nos. 8, 11 and 7.

HIGH SCHOOL CLASSES.

Analytical Sixth Reader.

Analytical Speller, Sections 153, 154, 215, 251-260, 281-308.

Song Garden, Third Book.

Robinson's Elementary Algebra, to Quadratics.

Ray's Higher Arithmetic.

Walton's Intellectual Arithmetic.

Warren's Physical Geography.

Anderson's Outlines of General History.

Alden's Citizen's Manual.

Huxley and Youman's Physiology.

Writing Book—Payson, Dunton & Scribner's.

